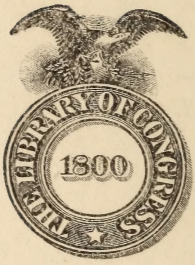

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A /

PLAIN AND EASY

INTRODUCTION

TO THE

KNOWLEDGE AND PRACTICE

OF

GARDENING,

WITH

HINTS

ON

FISH-PONDS,

BY

CHARLES MARSHALL,

VICAR OF BRIXWORTH, NORTHAMPTONSHIRE.

GOD Almighty firſt planted a *Garden*, and indeed it is the pureſt of human Pleaſures: It is the greateſt Refreſhment to the Spirits of Man; without which, Buildings and Palaces are but groſs handy Works.

BACON'S ESSAYS.

THE FOURTH EDITION,

CONSIDERABLY ENLARGED AND IMPROVED.

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PREFACE.

THIS work having come to a *fourth edition* in a few years, evinces its favourable reception by the public; and though the author truſts it will continue to recommend itſelf to thoſe who are acquainted with it, he thinks it is but doing himſelf juſtice, and may promote the ſale of the book, by republiſhing the following SANCTIONS as they occurred.

"The directions of this Manual appear to us to be diſtinctly and uſefully given, and little as we are uſed to the practical part of the ſcience, we have read the work with pleaſure." *Gentleman's Magazine*, June, 1797.

"This work is calculated for Gentlemen Gardeners, and we altogether recommend it as convenient in ſize, and very judiciouſly arranged." *Britiſh Critic*, October, 1797.

"This work is no compilation. The reſpectable author has given to the public, the reſult of his experience, delivered with that plainneſs and perſpicuity, which cannot fail of rendering his work highly uſeful to every reader who ſhall conſult it either for pleaſure or inſtruction." *Monthly Review*, November, 1797.

"A very extenſive and uſeful performance, in which much information will be found, and the young Gardener will derive both pleaſure and amuſement from this compendious and cheap manual." *European Magazine*, June, 1798.

"Mr. Marſhall's obſervations on the modes of cultivating different articles, deſerve the attention of the inexperienced Gardener." *Critical Review*, July, 1798.

"This is one of the moſt complete works on the ſubject we remember to have ſeen; and is a work both from its nature and execution, which every country gentleman ought to have in his poſſeſſion." *Analytical Review*, October, 1798.

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The Alphabetical *Liſts* in Section 19, contain a great number of plants, and thoſe trees, ſhrubs, and flowers, which are not referred to in the *Index*, muſt be looked for here; where is mentioned their ſtature, time of flowering, colour, nature, and propagation; all which arrangements form a plan entirely new. Thoſe who are led by the *Index* to any of the articles of *obſervation* in Sect. 19, ſhould alſo turn to the preceding *Liſt* for the ſame article, in order to complete their information.

SECTION I.

THE PRAISE OF GARDENING.

IT is of importance to the welfare of any *art*, that thoſe whoſe taſte inclines towards it, ſhould have a good opinion of its *utility*, and competent notions of its *principles*. It is therefore the deſign of the preſent ſection, to ſhew the degree of *eſtimation* that the art of *Gardening* is worthy of; and it is the object of the next, to aſſiſt in the acquiring that knowledge of *Nature*, upon which the art ſo much depends.

Not to enlarge upon the *profits* of gardening, its employments are certainly conducive to health of body, and peace of mind; and great indeed are the *charms* and recreations of a *garden* well ſtocked, and well managed by the hand, or under the direction of the *owner* himſelf: It at all times ſerves him as a ſource of rational amuſement, and honeſt ſatisfaction.

The *praiſe of gardening*, it is preſumed, can hardly be too highly extolled; and, as this has been ſo well done by the beſt of men, and moſt reſpectable of writers, it may better anſwer the preſent purpoſe to produce *their* ſentiments, than to attempt new ones.

What we admire, we praiſe; and when we praiſe,
Advance it into notice, that its worth
Acknowledged, others may admire it too.

COWPER.

The great Lord *Bacon's* opinion of gardening, given in the motto of the title page, is certainly both juſt and honourable. The agreeable *Cowley* ſpeaks of his darling *nature* as enjoyed in a *garden*, thus:

When GOD did man to his own likeneſs make,
As much as clay, tho' of the pureſt kind,
(By the great potter's art refin'd)
Could the divine impreſſion take,
He thought it fit to place him, where
A kind of heaven too did appear,
As far as earth could ſuch a likeneſs bear;
That man no happineſs might want,
Which earth to her firſt maſter could afford;
He did a *garden* for him plant,
By the quick hand of his omnipotent word;
As the chief help and joy of human life,
He gave him the firſt gift,—even before a *wife*.

And well he knew, what place would beſt agree,
With INNOCENCE and with FELICITY.
And we elſewhere ſtill ſeek for them in vain,
If any part of either yet remain,
If any part of either we expect
This may our judgment in the ſearch direct;
GOD the firſt *garden* made, and the firſt *city*,—*Cain*.

When *Epicurus* to the world had taught
That pleaſure was the chiefeſt good,
(And was perhaps i'th'right, if rightly underſtood)
His life he to his doctrine brought,
And in a *garden's* ſhade, that ſovereign pleaſure ſought.
Whoever a true epicure would be,
May there find cheap and *virtuous luxury*.

Nor does this happy place only diſpenſe
Such various pleaſures to the ſenſe,
Here *health* itſelf does live,
That ſalt of life, which does to all a reliſh give,

Its

Its ſtanding pleaſure, and intrinſic worth,
The body's virtue, and the ſoul's good fortune, health.

Methinks I ſee great *Dioclefian* walk
In the *Salonian* garden's noble ſhade,
Which by his own imperial hands was made:
I ſee him ſmile, methinks, as he does talk
With the ambaſſador, who came in vain
T'entice him to a *throne* again:
If I, my friends, ſaid he, ſhould to you ſhow
All the delights which in theſe gardens grow,
'Tis likelier much that you ſhould with me ſtay,
Than 'tis that you ſhould carry me away:
And truſt me not, my friends, if every day
I walk not here with more delight
Than ever after the moſt happy fight,
In triumph to the capitol I rod,
To thank the Gods, and to be thought myſelf a God.

Mr. *Cowley*'s paſſion for retirement was indeed *very* ſtrong; but might he not well ſay, "Is there not a cauſe?" He had been converſant in high and public life, and was very glad to leave

Thoſe dangerous poſts, where cuſtoms ill agree
With virtuous rules, or ſound philoſophy.

As one reaſon for his going out from *Sodom* (as he ſpeaks) to his little *Zoar*, he aſks,

Who that has reaſon and his ſmell,
Would not among roſes and jaſmin dwell,
Rather than all his ſpirits choak
With exhalations of dirt and ſmoak;
And all th' uncleanneſs which does drown
In peſtilential clouds a populous town.

Another poet (*Clericus*) retiring from town to a cottage and a *garden*, ſays,

I ſtrait betook myſelf to trace the laws
Of *nature*, upwards to its fruitful cauſe
And, digging mines of true philoſophy,
The myſtic ſtone I found, whoſe energy
Apply'd, tranſmutes ſome matter, ſome ſublimes,
Drawing within my circle *golden times*.

Often amuſed with feats of *gardening*,
Delightful exerciſe, I work and ſing!
And moving cheerful feel not half my toil,
Like ſwains that whiſtle, while they plough the ſoil.
Should any diſbelieve, I here invite
Such infidels to come, and truſt their ſight.

—Uncorrupt and happy days were thoſe
When *Roman Conſuls* exerciſed their hoes;
Whoſe leiſure hours in country cares were ſpent,
And whoſe diverſions all were innocent.
Oft their own labours furniſh'd out their feaſt,
And thus their fruits and ſallads reliſh'd beſt.

ART OF GARDENING.

* * * * * *

Mr. *Evelyn*, who had ſo great knowledge and experience in the way of gardening, ſpeaks its praiſe in theſe words: Though the gardener's life be a laborious one, yet is it full of tranquillity and ſatisfaction. A condition furniſhed with the moſt innocent, laudable and pureſt of earthly felicities; and ſuch as does certainly make the neareſt approaches to that bleſſed ſtate, where only they enjoy all things without pains.

* * * * * *

Mr. *Addiſon* ſays, I look upon the pleaſure which we take in a garden, as one of the moſt innocent delights of human life. A garden was the habitation of our firſt parents before the fall. It is naturally apt to fill the mind with calmneſs and tranquillity, and to lay all

all its turbulent paſſions at reſt. It gives a great inſight into the contrivance and wiſdom of providence; and ſuggeſts innumerable ſubjects for meditation.

* * * * * *

Mr. *Hervey*, in his Meditations, on return from a walk, having entered the *flower garden*, and called it a beautiful ſpot, ſays, "Here nature always pleaſing, every where lovely, appears with *peculiar* attractions. Yonder ſhe ſeems dreſſed in her *deſhabille*; grand, but irregular. Here ſhe calls in her hand-maid art; and ſhines in all the delicate ornaments, that the niceſt cultivation can convey. *Thoſe* are her *common apartments* where ſhe lodges her ordinary gueſts: *This* is her *cabinet of curioſities*, where ſhe entertains her intimate acquaintance. My eye ſhall often expatiate over thoſe ſcenes of univerſal fertility: My feet ſhall ſometimes bruſh through the thicket, or traverſe the lawn, or ſtroll along the foreſt glade; but to *this* delightful retreat ſhall be my chief reſort.—Thither will I make excurſions, but here will I dwell."

On the *Kitchen Garden* Mr. H. obſerves, "Here thoſe celebrated qualities are eminently united,—the utmoſt ſimplicity with the greateſt neatneſs: none of the productions affect finery. If it be pleaſing to behold their orderly ſituations, and their modeſt beauties; how delightful to conſider the advantages they yield! What a fund of choice accommodations here! What a ſource of wholeſome dainties, and all for the enjoyment of man! Not one ſpecies of all this is a cumberer of the ground. Not a ſingle plant but is good for food, or ſome way ſalutary. And with ſo beneficent an economy are the ſeveral periods of their miniſtration ſettled, that no portion of the year is left deſtitute of ſuch nouriſhing eſculents as are beſt ſuited to the temperature of the air, and the ſtate of our bodies.—Oh! why ſhould the poſſeſſor of ſo valuable a ſpot envy the condition of kings? Since he may

daily walk amidſt rows of peaceable and obſequious ſubjects; every one of which tenders him ſome agreeable preſent, and pays him a willing tribute. Such as is moſt excellently adapted, both to ſupply his wants, and regale his taſte; to furniſh him at once with both plenty and pleaſure."

From the amiable *Cowper* ſomething on this ſubject may be added. See the *garden*, in his Poem, entitled the TASK.

O friendly to the beſt purſuits of man,
Friendly to thought, to virtue and to peace,
Domeſtic life in rural leiſure paſs'd.

Scenes formed for contemplation, and to nurſe
The growing ſeeds of wiſdom; that ſuggeſt,
By every pleaſing image they preſent,
Reflections ſuch as meliorate the heart,
Compoſe the paſſions, and exalt the mind.

Oh! bleſt ſecluſion from a jarring world,
Which he, thus occupied, enjoys! Retreat
Cannot indeed to guilty man reſtore
Loſt innocence, or cancel follies paſt,
But it has peace, and much ſecures the mind
From all aſſaults of evil, proving ſtill
A faithful barrier, not o'erleap'd with eaſe,
By vicious cuſtom raging uncontroul'd
Abroad, and deſolating public life.

The morning finds the ſelf-ſequeſter'd man,
Freſh for his taſk, intend what taſk he may.
—If the *garden* with its many cares,
All well repaid, demand him, he attends
The welcome call.
Had I the choice of ſublunary good,
What could I wiſh, that I poſſeſs not here?

Sir William Temple commended the employment and care of a *garden* as his ſettled choice, ſaying,—For my own part, as the country life, and this part of it

it more particularly, were the inclination of my youth itſelf, ſo they are the pleaſures of my age.

Le Pluche juſtly aſſerts,—Of all the employments in life, none is more ſimple, natural, and entertaining, than the cultivation of plants.

Virgil of old, deſcribes the happineſs of a cultivator of the ground in gardening and planting, as equalling all the opulence of kings, in the eaſe, content, and freedom of his mind. This is one of the moſt aſſured truths; and happy are they who are free from the entanglements of artificial life, and not over-burthened with honour and greatneſs.

Gardening leads to *planting* and *farming*, of which, collectively, Mr. *Cowley* prettily ſpeaks.—It is one of the beſt natured delights of all others, for a man to look about him, and ſee nothing but the effects and improvements of his own art and diligence; to be always gathering of ſome fruits of it, and at the ſame time to behold others ripening, and others budding; to ſee all his fields and gardens covered with the beauteous creatures of his own induſtry; and to ſee, like GOD, that all his works are *good*.

Of a *country life* in general, Mr. *C.* ſays, "We are here among the vaſt and noble ſcenes of nature; where we walk in the light and open ways of the divine bounty, and where our ſenſes are feaſted with the clear and genuine taſte of their objects."

SECTION II.

CONCERNING VEGETATION.

AS a good GARDEN affords much *pleasure* and *profit*, it deserves every attention; and certainly the cultivation of it cannot be too *rationally* pursued. It is therefore that a sketch of the *Nature of Vegetation* is here attempted; for the use of those who are unacquainted with the subject to assist them in the pursuit of gardening with understanding.

Let the ELEMENTS be first considered.

EARTH, as an element, considered in itself, appears not to serve to the support of man or beast. Though from it all things spring as from a common womb, yet independent of the other elements, or extraneous matter, it neither produces, nor affords, any thing like food. Assisted however by these, there is a combination of powers, the effects of which are equally beneficial and wonderful.

It has been pretty much an opinion, that the *earth* acts only as a *receptacle* for nutriment; and as a resting place, or means of supporting plants erectly; to imbibe rain, dews, air, &c. needing continually to be repleniſhed by manures, or from the atmosphere. Indeed, it is not to be conceived, how the earth, considered as a solid, should pass through the capillary parts of plants. Experiments have proved, that the earth is very little, if at all exhausted, by the growth of plants, and consequently affords a presumption that plants are not fed by it.

There

There has been much controverſy about the *food* of plants. A reſpectable writer ſays, The ſaline, unctuous, and ſubtle ſlime, which the water ſeparates from the coarſe earth, and keeps in a diſſolved ſtate, is the principal nutriment of plants. And indeed, this is the opinion of others, who have treated the ſubject, and is juſtified by enquiries into the nature of the ſap of plants, by decompoſition:

Thoſe who contend for an *inherent* power in earth to nouriſh plants, lay a ſtreſs upon the circumſtance, that various earths have various qualities, ſuited to different parts. But to this it may be ſaid, that the earth being more or leſs binding, or compoſed of differently conſtructed particles, occaſions the parting with the food committed to it, the more or leſs freely, or altered according to its various modes of percolation, or ſtraining.

* * * * * *

WATER appears to have much to do in the ſubſiſtance of plants, for they conſume a great deal; and either die, or are at a ſtand, when they are deprived of it, or at leaſt of humidity from the air. It is proved, that ſeeds and plants, and in ſhort all ſubſtances, conſiſt chiefly of water, being reducible to liquids in a great degree.

Water (with reſpect to vegetation) has been defined to be, a mixed fluid, in which are all ſorts of particles proper for the compoſition of plants. Rooted trees have been ſet in water at the ſpring, (as a roſe) and put forth leaves fair, though pale; and it is well known, that many ſlips and branches of plants will ſtrike root in water readily: and gathered flowers not only keep freſh in it, but increaſe in ſize, and buds alſo open. Hyacinths are very commonly blown in water in warm rooms for an early blow. All ſeeds will germinate, and ſome grow in it.

The natural ſtate of water uninfluenced by heat is ice, and when very cold, it is too denſe a fluid to paſs through ſome of the capillary veſſels of plants; yet a ſmall degree of heat rarifies it; and as its globules are capable of being infinitely divided by a proportionate heat; it is thus rendered fit to paſs through the fineſt canals. It mixes with the nutritive properties that are lodged in the earth, and is (at leaſt) the *vehicle* of the food of plants. In this reſpect alone, it is moſt valuable. Without it, nothing could be elaborated in nature, no fermentation be wrought, and animals and plants would die of thirſt!

* * * * * *

AIR is found in a conſiderable degree in water, in plants, and in fruits. It may be almoſt demonſtrated (ſays one) that the vegetable nouriſhment is principally in the air: The *tree Sedum* ſuſpended, lives and grows for years by air and its moiſture.

How *neceſſary* this element of air is to *man*, the commoneſt obſervation evinces. Deprived of air, life is quickly loſt, and in a depraved ſtate of it, runs faſt to ſickneſs and death. Thus *plants* are found to flouriſh in a free and open air, and grow pale and languiſh in the contrary. But air is not only neceſſary for the *leaves* of plants to breathe in, but their *roots* require it: Plants will not do well if the ſoil is too much bound for the *air* to penetrate freely about them.

The ſickline ſs of *houſed* plants has been ſaid to be owing greatly to want of *motion*. But the want of freſh air, is undoubtedly the chief cauſe; for pure air is fraught with animating principles, and by its attenuating and elaſtic properties, ſeparates the groſs juices, keeps the ſap in motion, and the plants in health.

Air conveys to the organs of ſmelling, all thoſe grateful ſcents, which plants, flowers and fruits produce, and we are greatly regaled, and refreſhed by them.

If

If it be aſked, what *air* is, and of what it conſiſts? It may be anſwered, Particles of wet and dry bodies volatilized, and rendered elaſtic by fire. The air or atmoſphere that ſurrounds our earth, contains a mixture of all the active volatile parts of the whole habitable world; that is, of all vegetables, minerals and animals. Whatever perſpires, corrupts or exhales, impregnates the air; which, being acted upon by the ſolar fire, produces within itſelf, all ſorts of chemical operations, diſpenſes again thoſe ſalts and ſpirits in new generations, which it had received from putrefactions.

* * * * * *

FIRE, as it operates from the prime body of it the SUN, gives life and energy to all, completing the proceſs of nature. There is no exiſting without it. Its total abſence would preſently bring all animation to the coldneſs of death!

The *ſun* by its warmth (conveyed by the air) ſets forward that *fermentation* in the earth, and gives that ſpirit to plants, which effects growth, and concocts their juices to make them fruitful.

It is by the *rarefaction* of the air and juices contained in the roots, and all the parts of a plant, that motion and expanſion are given to it; and by its aſcending force, puſhes into buds, leaves, flowers and fruits; ſending off ſuperfluous and excrementitious moiſture into the atmoſphere, thus giving us the *ſcents* peculiar to each. That the *ſun* does this, is evident from what is experienced in *artificial warmth*, hurrying on the growth of plants, which is ever proportionate to the heat applied, provided there is a proper ſupply of moiſture.

Without the vivifying *ſun*, the other elements would be inactive matter, and "*no longer would the fig-tree bloſſom, nor fruit be in the vine: The labour of the olive would fail, and the fields yield no meat.*" The operative power of the *ſun* reaches the deepeſt receſſes, to beds

of metals, and to "*the place of ſapphires; and there is nothing hid from the heat thereof.*"

What bleſſings does this *bounteous planet* pour
On the glad heart of man, when rolling round
His azure road, he ſcatters as he flies,
To warm his raptur'd boſom, *light* and *joy!*
NEWCOMB.

The SUN is the fountain of LIGHT. This glorious object of creation, as a *luminary*, gives chearfulneſs both in nature and appearance to all things: If light is not ſo neceſſary to our exiſtence as heat, life would yet be miſerable without it.

As to *vegetation*, we may obſerve, without *light* plants get always ſickly, and would not exiſt long if deprived of it. Light, philoſophically conſidered, is half their nouriſhment. All plants turn to the light as to a powerful attraction, or, as if conſcious how neceſſary it is to their exiſtence. Light at the ſame time that it heats, doth wonderfully rarify and raiſe the ſap. It is the ſame with *Æther*, and it ſo mixes with other bodies, as to enter into their compoſition, and encreaſe their weight. The aromatic flavour of vegetables ſeems to depend upon the ſun's light as much as colours do.

The phyſical properties of that *etherial* ſubſtance, which is ſo ſubtle and pervading as *light*, we may well believe to be various and wonderful, though inconceivable.

Behold the *light* emitted from the ſun,
What more familiar, and what more unknown?
While by its ſpreading radiance it reveals
All nature's face, it ſtill itſelf conceals.
How ſwift th' effulgent emanations fly
Thro' the blue gulph of interpoſing ſky!
Millions of miles, ſo rapid is their race
To cheer the earth, they in *few moments* paſs.
Amazing

Amazing progreſs! at its utmoſt ſtretch,
What human mind can this ſwift motion reach?

BLACKMORE.

How impreſſively are we taught to value the bleſſing of *light*, by a view of *day-break* in a fine ſummer's morn!

———The hour of morn returns,
Unbars the gates of *light*, and opens wide
A proſpect to the eye, which now unfolds
Ten thouſand beauteous ſcenes which lay conceal'd
Before in darkneſs: now the radiant heavens
Glitter with azure pav'd, with roſes ſtrew'd.
With lively verdure each green plain array'd,
Each flower puts on a glow of richeſt hue;
The wide creation now is ſeen adorned
In all her rich attire and beauties bloom,
View'd by each wand'ring eye with raptur'd joy!
All the rich pomp which theatres diſplay
Their ſhining ornaments, the luſtres hung
In the proud courts and palaces of kings,
Loſe their diminiſhed light, and die away,
Whene'er the *ſun* unfolds his radiant beams!

NEWCOMB.

From this view of the *elements* it appears, that their offices are mutual, and that there is a *harmony* of them, neceſſary to the welfare of plants, in a view to which *art* may ſometimes aſſiſt nature. It is for this end that what is ſaid of them here is advanced, that the young gardener may convert to *uſe* his entertainment.

* * * * * *

Having ſeen a little into the nature of the ELEMENTS, principally as they relate to the exiſtence of plants, let us proceed to conſider the *plants themſelves*. Their ſtructure has been examined by the greateſt geniuſes, and though able, (perhaps) to *determine* little of Nature's

Nature's laws, yet has the pleasure and satisfaction they have reaped repaid them their trouble. Though after all our researches, we are finally led to this conclusion, that God's works, like his ways, are "past finding out;" yet if there is any satisfaction in knowledge, or any consolation in piety, these gratifications are to be sought in, and will be reaped from attentive and modest enquiries into Nature. "*The works of the Lord are great, sought out of all them that have pleasure therein.*"

Nature is nothing but the art of GOD; a bright display of that wisdom, which demands an eternal tribute of wonder and worship.

The notions which arise from *Nature's* light
As well adorn the mind as guide her right,
Enlarge her compass, and improve her sight.
These ne'er the breast with vain ambition fire,
But banish pride, and modest thoughts inspire.
By her informed we blest *religion* learn,
Its glorious OBJECT by her aid discern.
The rolling worlds around us we survey,
Th' alternate sov'reigns of the night and day;
View the wide earth adorn'd with hills and woods,
Rich in her herds, and fertile in her floods.
Walk through the deep apartments of the main,
Ascend the air to visit clouds and rain:
And while we ravish'd gaze in Nature's face,
Remark her order, and her motions trace.
The long coherent chain of things we find
Leads to a *cause* SUPREME, a wise *creating mind*.

BLACKMORE.

* * * * * *

SEEDS of plants stand first to be considered, and they are truly wonderful. What large plants from seeds no bigger than a grain of sand? What a stately *oak* from a little acorn?

The

The ſeeds of *fern*, which by prolific heat,
Cheer'd and unfolded, form a plant ſo great;
Are leſs a thouſand times than what the eye
Can unaſſiſted by the tube deſcry.

BLACKMORE.

Seeds contain in *embryo* (or miniature) the plant they are to produce, in all its parts, which they have preſerved from age to age, ſeeds producing plants, and plants ſeeds, &c.

They are covered with coats that are finely and cloſely wrought, the better to keep the moiſture of the earth from coming in too ſuddenly upon the lobes, or the little plant, which might occaſion their rotting, and we find that almoſt every ſort of ſeed, by means of theſe coverings, muſt remain different lengths of time in the earth, before they begin to germinate. Some will not ſpring in the natural ground till the ſecond year after they are buried, while others will begin to ſhoot in three days after ſowing. This is owing to their requiring different degrees of moiſture, heat and air, to make them germinate; i. e. bring them into a ſtate of fermentation.

The *ſubſtance* of ſeeds appears to be ſpent firſt in feeding the radicle, and then in the nouriſhment of the two firſt, or *ſeed leaves*, which are commonly of a different ſize, ſhape and ſubſtance from the *proper* leaves of the plant: From between theſe comes a ſhoot bearing the *true* leaves. The *lobes* (or ſubſtance) of ſeed, conſiſt of a farinous nutriment, adapted to the infant ſtate of the plant, when ſoftened and diſſolved by the moiſture of the earth, which extends and unfolds the young plant (or plumule) in the ſame manner, as the nouriſhing juice in the eggs of animals hatches their embryo. The ſeed leaves therefore contain a ſugary juice, which is evident from inſects ſo greedily biting them, and their pleaſant taſte in ſallads, as thoſe of *turnips*, *cabbages*, &c. They

are thick and ſucculent, calculated to imbibe air and moiſture from the atmoſphere, for the ſupport of the tender plant, that might otherwiſe ſuffer by drought: for it muſt *proceed* in growth, or it would quickly die. When the radicle has ſtruck downwards, the office of the ſeed is evidently to nouriſh theſe leaves, as is ſeen by the ſeed coming above the ground with them, exhauſted of its ſubſtance—a mere ſhell ſticking to the top of the leaves.

But ſome plants have no ſeed leaves properly ſo called, as *corn*; which has therefore been deemed by ſome, not ſtrictly a ſeed, but a bud, or bulb.

It has been *doubted* whether all plants have ſeed, becauſe *ſome* ſorts have not been obſerved to produce it. To conclude that they have, is however more agreeable to the uniformity of the *divine* procedure, and altogether to reaſon.

Seed may be conceived ſo ſmall as not to be diſcerned with the help of convex glaſſes, as we know there are many not diſcernible without them; and with this minuteneſs, it may be extremely fugacious by its ſlight adheſion to the plant.

The *truth* is, GOD originally ordained that plants ſhould proceed from ſeed, and they do, (*Gen.* i. 2.) It was long ſaid, that *fern* bare no ſeed; but this is a demonſtrable miſtake. That *Muſhrooms* produce ſeed, we need not doubt. Many of the *moſſes* are ſo ſmall in the ſtate of plants, that the *microſcope* only can diſcover their flowers, and even in ſome, the plants themſelves are but barely thus diſcernible. A great variety of ſeeds are wafted about continually in the air, and produce their kind, whenever they light upon a proper matrix. Whatever has been objected there appears good ground for believing, that there is no natural production, either in the vegetable or animal kingdom, but what comes from the ſeed, or egg of ſome parent.

As

As to certain plants appearing where none were before, we know that ſome ſeeds will keep many years, when deep buried, and being afterwards brought to the ſurface, have vegetated, as the wild *muſtard*, &c. Beſides the *wind* carrying ſome ſorts of ſeeds to a conſiderable diſtance, *birds* alſo drop a great many, ſo that plantations of *oaks*, &c. have ſprung up by means of crows carrying the acorns, and dropping them in cracked ground.

PLANTS follow ſeed, and we find them proceeding in a ſteady unceaſing progreſſion towards maturity, to their deſtined end, i. e. production of the like, from which they ſprung (ſeed) to preſerve the ſpecies. And the *economy* of nature is ſo regular, that a certain portion of *time* is invariably kept (allowing for accidental circumſtances) for this buſineſs. So certainly does Nature purſue her end in all reſpects, that the identical ſpecies is always preſerved, as to the diſtinguiſhing properties of each, though the ſoils in which ſeeds are ſown are ſo various. Altogether under the *ſame* circumſtances are produced the ſweet ſmelling flower, the nouriſhing corn, and the poiſonous plant, though differing much in ſtrength, in figure, and other particulars.

The *juices* in the veſſels of plants undergo (according to their conformation) different fermentations, and thus become altered; in which chemiſtry of nature, its powers and reſults are wonderfully exact.

Peculiar pores peculiar juice receive.
To *this* deny, to *that* admittance give.
Hence various trees their various fruits produce,
Some for delightful taſte, and ſome for uſe,
Hence ſprouting plants enrich the plain and wood,
For phyſic ſome, and ſome deſign'd for food.
Hence fragrant flow'rs with different colours dy'd,
On ſmiling meads unfold their gaudy pride.

BLACKMORE.

The

The ROOTS of plants are to keep them fixed in the earth and to draw food from it; which they do (chiefly at leaſt) by their *ends* which have been therefore called mouths: In general they affect an horizontal growth, for the benefit of the ſun and air, and never deſcend above a certain depth from the ſurface.

By means of the *root*, nouriſhment proceeds through the pipes and capillary conduits of plants, continually from the earth, and by the action of the ſun and air, circulates, rarifies, and diſtributes itſelf. This juicy food, ſwells the little bags, or cells (of which the ſubſtance of plants is compoſed) and following the different modifications thereof, filtrates athwart the parts. For example. That which is moſt pure and fine, ſerves to nouriſh the flowers and fruits; that which is not ſupplies the branches, and leaves, and roots; the moſt groſs and earthy ſerves for the bark; and the moſt oily is for gum and roſin. Juſt the ſame as we find it in *animals*, where the food they receive into the ſtomach paſſes afterwards into the blood, circulates into the veſſels, and purſuing its different degrees of attenuation, ſerves to nouriſh the different parts of the body.

The STEMS or trunks of plants are for the ſupport of the head, and to convey juices from the roots upwards for the leaves, branches, &c. and are compoſed (as the roots) of bladders, and various conduits for air, ſap, &c. perpendicular, ſpiral, and horizontal from the pith to the bark. Theſe veſſels may be ſomewhat ſeen with the naked eye, as in ſlices of the young ſhoots of *nut*, *apple tree*, and *vine*, but very evidently by a microſcope. It is obſervable, that ſome plants which are weak and pipy have *knots* at proper diſtances to ſtrengthen them, and others have *claſpers* to hold them up; while others are robuſt enough in ſtem to brave the fury of a tempeſt.

The LEAVES of plants are very variouſly, but beautifully conſtructed in their form and ſubſtance; and if we conſider them as attracting nouriſhment from

from the root and the atmoſphere, and as perſpiring and reſpiring, they are more than commonly thought eſſential to vegetation; and ſo we find that if the ſtems, or branches of a plant, are conſiderably deprived of them, it becomes ſtunted and diſeaſed, and if any fruit appear, it proceeds ſlowly in growth, and is ill flavoured. The *quantity* of nutriment which a plant derives from the earth, is in proportion to the number and ſize of its leaves; thus that they may uninterruptedly perform their offices, they are diſtributed in a very diſtinct and ſeparate mode.

The *under* and *upper* part of leaves are different, and have ſeparate offices; the under is rough and porous, as if adapted to imbibe the riſing moiſture of night dews; and the upper, or cloſer, to exclude the groſſer parts of the atmoſphere, and to imbibe ſome finer food, as to "draw the live ether". Thus leaves will not endure to be *reverſed*, as is ſeen by the certain and quick return to their right poſition, when forced from it, and till this is effected, they perform not the proper functions of nature.

That the gloſſy *ſurface* of leaves have an intimate connection with the *light* is evident, as they riſe and fall (in a degree, ſome plants more and others leſs) as the ſun moves. If they are turned from the light they twiſt themſelves towards it, as if they had enjoyment, and were *conſcious* of the benefit.—The curious will meet with gratification relative to this ſubject, by conſulting *Hill*'s Tract *On the Sleep of Plants*; or his gardening for October:—a large folio.

One of the offices of leaves, ſeems to be, to ſubtilize, and give more ſpirit to the abundance of nouriſhing ſap, and to convey it to the little *buds* at their foot *ſtalk*, to whoſe welfare they are eſſential.

If the *texture* of the leaves be ſcrutinized, they are found curiouſly ramified; the ribs and fibres of each ſeeming much like a ſpreading plant. The ramifications hold a cloſe communication with each other;

ſo

ſo that the principal rib ſends out lateral ones leſs ſtrong, and they again an infinite number of fine ones in all directions; and theſe are veſſels of two kinds, viz. for *ſap* and *air*. As leaves throw off a great deal of excrementitious, ſo do they imbibe a great deal of nutritious moiſture, as is evident from the general refreſhments received from dews. Yet we are not to conclude, that the other parts of plants do not the ſame in a leſs degree; and the rough bark of the trees, and the outer veſſels, are well calculated to detain moiſture, to convey to other parts.

The BRANCHES of plants come next to be conſidered. How beautifully do they ſpread, and how uniformly do they proceed, keeping up preciſely the ſame mode of growth, one from another throughout the whole; till the head of the plant, or tree, attains its cuſtomary ſize, and own peculiar form; which if it has grown with native liberty, proves always of an agreeable ſymmetry.

The *texture* of branches conſiſts of the ſame kind of veſſels as the ſtem, or trunk; but here it may be obſerved, that there is yet a ſpecific difference in the veſſels of the various parts, as is concluded from their affording juices of a different flavour and effluvia in the bark, wood, leaves, flowers and ſeeds; ſo that from the *ſame* plant are extracted medical properties of very contrary nature.

BUDS are like ſeeds, as they contain the future growth of branches and fruit in miniature, ſo that for inſtance, in the buds of a *currant-tree* may be diſcovered (by a microſcope) even before winter, the woody branch, and the bunches of fruit. The future fruit alſo has been viewed in the bud of a *vine*. In the ſhort buds of *pears*, which appear at *Midſummer*, an indifferent microſcope will ſhew the bloſſoms deſigned for the *April* following. The buds of a *Mezerion* being examined at *Midſummer*, had the bloſſoms diſcovered

covered in them, though the time of their blow is not till *February*.

Thus it appears, that the leaves, bloſſoms, fruit, and branches, on all trees, are formed the year *before*; and ſo their fruitfulneſs in the year they bear, is no otherwiſe the conſequence of *that* ſeaſon, than that nature has gone without any deſtructive check in her progreſs, and particularly at the time of flowering, when many bloſſoms are deſtroyed by inclement weather, and by wet only as much as any thing.

* * * * * *

The FLOWERS of plants have not yet been particularly noticed, but of them ſomething muſt, and much might, be ſaid.

> Go, mark the matchleſs workings of the power
> That ſhuts within the ſeed the future *flower*;
> Bids theſe in elegance of form excel,
> In colour theſe, and thoſe delight the ſmell;
> Sends nature forth, the daughter of the ſkies,
> To dance on earth, and charm all human eyes.
>
> COWPER.

Flowers have a general ſtructure in ſubſtance, ſimilar to the other parts of plants, as to veſſels for ſap, air, &c. only are ſo much the more exquiſitely formed, as the leaves are of ſo delicate a texture. They are formed in the bud while in the *pith*, and ſo conſequently are the fruit and ſeed.

The *flowers* of many proceed from a bud, or knot, the leaves or parts of which do firſt cover the flower contained therein, whilſt it is yet unable to bear the inconveniencies of the weather, and defend it from the ſame; and after the flower is blown, they keep up its leaves, that they may not hang confuſedly together, but regularly repreſent their beauties to the eyes of the beholders: This is exemplified in the *carnation*. Thoſe flowers that have a cup to ſuſtain their leaves, are

are weak in their texture, and ſo need this ſupport; but thoſe that are ſtrong have it not, as *lilies*, *tulips*, &c. Thoſe that have no cup are, however, covered in the bud by ſome *ſheath*, to preſerve them, while young, and yet too tender to be expoſed.

The *leaves* of flowers protect and conceal the *ſeed* of thoſe that bear it, where nature ſecretly works to the great end of propagation. The ſeed is the natural offſpring of the flower, and when this is once well formed, the ſeveral parts of the flower dwindle and diſappear. So that while we are admiring the colour, ſhape, and perfume of theſe delightful companions of our walks, they are kindly engaged to provide the means of perpetuating pleaſure to us.

The care which the AUTHOR of *nature* has taken to preſerve the *ſeed* of plants, by the flower leaves which contain the embryo, as in a matrix, is admirable! The flowers themſelves come not forth till the ſeaſon ſuits their particular temperament; many are hid till then under the coverture of the earth, and thoſe that dare to continue above ground all the year, have yet their *gems* carefully locked up, and thus their ſucceſſion and their fruits are ſecured to us.

The *flowers* of plants have a remarkable property, when they begin to unfold, and the ſeed is yet young and tender; they obſerve the courſe of the weather, day and night, opening and ſhutting their flowers accordingly. There is alſo a property of ſome flower plants, *twining* round ſolid bodies, or fixing themſelves to them by *claſpers*, laying faſt hold of what may be in their way. *Flowers* have many admirable properties and parts, that might be conſidered diſtinctly, if it were deſigned to ſpeak of them *botanically*.

From *flowers* (of which every month in the year has its beauties) we eventually gratify the palate, by a valuable *nectar*, and from many we immediately reap agreeable *odours*; but it is for their *colour* to delight

light the eye, that we chiefly cultivate them; and in this reſpect we may exclaim with the poet,

Who can paint like nature? Can imagination boaſt
Amidſt its gay creation, hues like her's?
Or can it mix them with that matchleſs ſkill,
And loſe them in each other, as appears
In every bud that blows?——

THOMSON.

But not only the *colours* delight the eye, the *forms* of flowers are objects of admiration. The *leaves* of the plants (not to mention the ſhades of their green and variegations of other colours) are of various ſymmetry, ſome plain, others indented, ſome hard, ſome ſoft, ſmooth, hairy, &c. *Flowers* are compoſed, ſome of only one, others of ſeveral and numerous leaves. Here it appears like a large veſſel gracefully opening. There it forms ſome groteſque figure, in imitation of a muzzle, head piece, or cowl. Here it is a butterfly, a ſtar, a crown, a radiant ſun. Some are ſcattered on the plant without any art; others compoſe noſegays, globes, tufts of feathers, garlands, pyramids, &c.—The *ſeeds* of plants too are as variouſly formed as their leaves and flowers.

The following deſcription of *Flora's feſtival* and the month of *May*, may very well finiſh the notice here taken of *flowers*.

The good *Poſthumius* choſe the firſt of *May*,
To FLORA ſacred, and obſerved the day
With holy rural rites, that won by prayer
She might diffuſe her bleſſing o'er the year;
His homely neighbourhood in green privet dreſs'd,
With ſtrict devotion keep the cheerful feaſt,
And crowned with chaplets, to fair *Flora* bring
The firſt and freſheſt beauties of the ſpring.
Gardens are now with choice perfumes ſupplied,
By theſe and thouſand nameleſs ſweets beſide:

'Tis

'Tis the gay month of all the youthful year,
When nature ſmiles ſerene, and calm the air;
In the tall graſs the ſoft *Favonius* plays,
And nightingales repeat their tuneful lays;
The flocks too friſking o'er the flowery vale,
With eager joy the cheerful ſeaſon hail.

RAPIN.

In conſidering the works of *nature*, it is hardly poſſible but to feel both concern and indignation at the folly of *Atheiſm*, and the abſurdity of the *Atomic* philoſophy. Both have been well expoſed by many writers, and completely ſo by Sir *Richard Blackmore*, in his Poem on the *Creation;* from which though ſome extracts have been already made, let the following be added,

———How dark is human *reaſon* found,
How vain the man with wit and learning crown'd;
How feeble all his ſtrength when he eſſays
To trace dark *nature*, and detect her ways,
Unleſs he calls its AUTHOR to his aid
Who ev'ry ſecret ſpring of motion laid:
Who over all his wond'rous works preſides,
And to their uſeful ends their cauſes guides?
Theſe paths in vain are by inquirers trod,
There's no philoſophy without a GOD.
Th' ETERNAL MIND's exiſtence we ſuſtain,
By proofs ſo full, by evidence ſo plain,
That none of all the ſciences have ſhewn
Such demonſtration of the truths they own.

Good heaven! that men who vaunt diſcerning ſight,
And arrogant from wiſdom's diſtant height,
Look down on vulgar mortals who revere
A CAUSE SUPREME, ſhould their proud building rear,
Without one prop the pond'rous pile to bear!

Ye friends of *Epicurus* look around,
All nature view with marks of prudence crown'd.

Mind the wife ends which proper means promote,
See how the different parts for different use are wrought;
Contemplate all this conduct and *design*,
Then own, and praise, the ARTIFICER DIVINE!

For several of the foregoing observations, and some of the passages on vegetation, Mr. M. thinks it proper to acknowledge, that he is indebted to the excellent Mr. *Derham*, and others.

SECTION III.

OF THE FORMATION OF A GARDEN.

THE garden here meant, is one where *vegetables*, *fruits* and *flowers* are cultivated under the same inclosure. Considering the profit and pleasure to be reaped from a good *garden*, it is certainly an object of great consequence to the comfort of human life. It will not, therefore, be prudent in any one who has a garden to *form*, to be niggardly, either in allotting ground for it, or sparing in expence and trouble to prepare and lay it out in the *best* manner.

The agreeable work of making a *new* garden can happen to few; and when it does, *soil*, *situation*, and *space*, all favourable, are happy circumstances not always at command: It often indeed happens, however, that pieces of ground are taken into use as additions, and some judgment should be exercised in the choice, that the business may be well done.

To help towards reſolving on the *quantity* of ground it may be prudent to cultivate as a garden, a general idea may be given in obſerving, that an *acre* with wall-trees, hot beds, pots, &c. will furniſh employment for a man, who at ſome buſy times will need aſſiſtance. The *ſize* of the garden ſhould, however, be proportioned to the *houſe*, as to the number of inhabitants it does, or may contain. This is naturally dictated; but yet, it is better to have too much ground allotted than too little, and there is nothing monſtrous in a large garden annexed to a ſmall houſe.

Some families uſe few, others many vegetables, and it makes a great difference whether the owner is curious to have a *long* ſeaſon of the ſame production, or is content to have a ſupply only at the more common times. But to give ſome *rule* for the quantity of ground to be laid out, a family of four perſons (excluſive of ſervants) may have a *rood* of good working open ground, and ſo in proportion.

But if poſſible, let the garden be rather extenſive according to the family; for then, a uſeful ſprinkling of *fruit trees* can be planted in it, which may be expected to do well, under the common culture of the ground about them; a good portion of it alſo may be allotted for that agreeable fruit the *ſtrawberry* in all its varieties; and the very diſagreeable circumſtance of being at any time ſhort of vegetables, will be avoided. It ſhould be conſidered alſo, that *artichokes*, *aſparagus*, and a long ſucceſſion of *peas* and *beans*, require a good deal of ground. *Hot-beds* will alſo take up much room, if any thing conſiderable be done in the way of raiſing *cucumbers*, *melons*, *flowers*, &c.

The *ſituation* of a garden ſhould be dry, but rather low than high, and as ſheltered as can be from the *North* and *Eaſt* winds. Theſe points of the *compaſs*, ſhould be guarded againſt by high and good fences; by a wall of at leaſt ten feet high; lower walls do not anſwer ſo *well* for fruit-trees, though one of eight may

do. A garden ſhould be ſo ſituated, to be as much warmer as poſſible, than the general temper of the air is without, or ought to be made warmer by the ring, and ſubdiviſion fences: This advantage is eſſential to the expectation we have from a *garden* locally conſidered.

As to *trees* planted without the wall, to break the wind, it is not to be expected to reap much good this way, except from ſomething more than a ſingle row; i. e. a plantation. Yet the fall of the leaves by the autumnal winds is troubleſome, and a *high* wall is therefore adviſeable. *Spruce firs* have been uſed in cloſe *ſhorn* hedges; which as *evergreens*, are proper enough to plant for a ſcreen in a ſingle row, though not very near to the wall; but the beſt *evergreens* for this purpoſe are the *evergreen oak*, and the *cork tree*. The *witch elm*, planted cloſe, grows quick, and has a pretty ſummer appearance behind a wall; but is of little uſe then, as a ſcreen, except to the *Weſt*; where ſtill, it may ſhade too much (if planted near) as it mounts high: In a dry hungry ſoil, the *beech* alſo is very proper; and both bear cutting. The great *maple*, commonly called the *ſycamore*, is handſome, of quick growth, and being fit to ſtand the rudeſt blaſts, will protect a garden well in a very expoſed ſituation: the wind to be chiefly guarded againſt as to ſtrength, in moſt places, being the *weſterly*.

The *form* of a garden, may be a ſquare, but an oblong is to be preferred; and the area rather a level; or if there be any ſlope, it ſhould be *ſouthward*, a point either to the *Eaſt*, or *Weſt* not much ſignifying, but not to the *North*, if it can be avoided, becauſe crops come in late, and plants do not ſtand the winter ſo well in ſuch a ſituation. A garden with a *northern* aſpect, has, however, its advantages, being cooler for ſome ſummer productions, as *ſtrawberries*, ſpring ſown *cauliflowers*, &c. and therefore to have a little ground

under cultivation ſo ſituated, is deſirable; eſpecially for late ſucceſſion crops.

The *ſoil* that ſuits general cultivation beſt, is a *loam*; rather the red than the black; but there are good ſoils of various colours, and this muſt be as it happens: The worſt ſoil is a cold heavy clay, and the next a light ſand; a moderate clay, however, is better than a very light ſoil, though not ſo pleaſant to work. If the ſoil is not good; i. e. too poor, too ſtrong, or too light, it is to be carefully improved *without delay*. Let it firſt, at leaſt, be thoroughly broke, and cleaned of all rubbiſh, to a *regular* level depth at *bottom* as well as top, ſo as to give full eighteen inches of working mould, if the good ſoil will admit of it; none that is bad ſhould be thrown up for uſe, but rather moved away. This rule of *bottom* levelling is particularly neceſſary when there is clay below, as it will ſecretly hold up wet, which ſhould not ſtand in any part of the garden. When a piece of ground is *cleared* of roots, weeds, ſtones, &c. it would be of advantage, to have the whole thrown into two feet wide *trenches*, and lay thus as long as conveniently may be. The ground cannot be too well *prepared;* for when this buſineſs is not performed to the bottom at firſt, it is often neglected, and is not conveniently done afterwards; and ſo it happens, that barely a ſpade's depth (or leſs) is too often thought ſufficient to go on with. There is this great advantage of a *deep* ſtaple, that in the cultivation of it, the bottom may be brought to the top every other year, by double trenching, and being thus renewed, leſs dung will do, and ſweeter vegetables be grown: Tap-rooted things as *carrots* and *parſnips* require a good depth of ſoil.

The *aſpect* of the *wall* deſigned for the beſt fruits, may be full *South*, or rather inclining to the *Eaſt*, by which it will catch the ſun's rays at its riſe, the cold night dews be earlier and more gently diſſipated, and the ſcorching rays of the afternoon ſummer's ſun are ſooner

ſooner off. By thus having the walls of a garden not directly to the four points, the *North* wall is greatly advantaged, by having more ſun.

The *border* next this wall ſhould be of very good earth, about two feet deep, riſing a little towards the wall. A free moderate *loam*, or ſome freſh maiden ſoil, not too light, is *neceſſary*; and if it is not naturally there, let no trouble be ſpared to procure it, if it can be had, ſo as to make all the borders *promiſing* good; and in order to this, if *manure* is neceſſary, let it rather be that of rotted vegetables, or turf with a ſmall quantity of wood aſhes, or a leſs of ſoot, or ſalt; for the roots of fruit-trees ſhould not meet with much *dung*, at leaſt of *horſes*; that of *cows* is the beſt, or that of *ſheep* or *hogs*, will do, well-rotted, and well mixed, &c. being worked in the borders, as long as poſſible before the trees are to be planted. Let the *holes* be ſome time opened beforehand, that they may be improved by expoſure to the atmoſphere. Thus due care will be taken, and all things ready to go about the work of *planting* properly.

The *borders* for *peaches*, &c. cannot be too wide, for in a few years the roots will ſpread a conſiderable way; and that they may do it without *impediment* of rubbiſh in the walks, and without meeting with a *bad* ſoil, is of the greateſt conſequence to the future health and fruitfulneſs of the trees.

If a garden is *large* and ſquare, a ſecond *South* wall, running down the middle of it would be very uſeful; and ſo, if large and long, a *croſs* wall or two might be adopted, as giving opportunity for the cultivation of more trained *fruit trees*; and if there is any idea of *forcing* fruits, theſe interſecting walls, ranging *Eaſt* and *Weſt*, are proper for it (as ſituated within the ring fence) furniſhed with flues, &c.

The *beſt* fruit border being prepared for *peaches*, *nectarines* and *apricots*, or *vines* and *figs*, the trees ſhould take their reſidence there (if the leaf is falling) about

the latter end of *October*, or as ſoon after as can be. If the middle of *December* be paſt, *February* is then the time, though ſome gardeners plant all winter, if the weather is open enough at the time to work the ground. *March* may do, or even [upon a pinch] the beginning of *April*.

Wall-trees ſhould not be older than *two* years from grafting, or budding. Much diſappointment has been the conſequence of planting old *trained trees*, through their being accuſtomed (perhaps) to a contrary ſoil, or by damage done the roots in taking the trees up; and thus, inſtead of ſaving time, it has frequently been loſt, being obliged, (after years) to be replaced with young ones. But if trained trees are to be made uſe of, let them be planted as early, and with as full roots as poſſible, and in a right good ſoil. Except in fine ſituations, as to ſun, ſhelter, and climate, never plant *early* and *late* peaches, as the firſt may be cut off, and the latter not ripen: *October* peaches are generally poor fruit much *North* of *London*.

The *diſtance* to plant, ſhould be about eight or nine inches from the wall, and let *apricots*, *peaches*, and *nectarines* be twenty feet aſunder, more or leſs, according to the height of the wall; though for the ſmall early ſorts fifteen or ſixteen feet will do. As the larger *apricots*, however, grow freely, and do not well endure the *knife*, they ought to have twenty-five feet allowed them: This is for a wall of nine or ten feet high; if higher, the diſtance may be leſs, and if lower, the contrary. This room may ſeem (to ſome) too great; but when trees are planted in too *confined* a ſpace, after a few years it is troubleſome to keep them pruned within bounds; and the cutting they *muſt* have, makes them run to wood, and thus to become leſs fruitful. *Fig-trees* require as much room as the *apricot*, or rather more, as they grow freely, and are to extend without ſhortening. Though other trees are beſt planted in *October*, the *Fig* ſhould not be till *March*.

The

The *intermediate* ſpaces between *peaches*, *nectarines*, and *apricots*, may have a *vine*, a *dwarf-cherry*, or *currant*, or *gooſeberry tree*, of the early ſorts, as the ſmooth green and ſmall red, to come in early; and improved in the beauty, ſize, and flavour of their fruit, by the advantage of ſituation. But whereſoever *grapes* can be expected to *ripen*, there let a young plant, or cutting, be ſet, though the ſpace be confined; for the *vine* (freely as it ſhoots) bears the knife well to keep it within bounds. If the wall be high, the *cherry*, or *plum*, may be half-ſtandards, which being after a while kept above, will be more out of the way of the principal trees: though dwarfs may be drained ſo as not to interfere. Some have planted half-ſtandards of the ſame kind of fruit as the dwarfs: but which ever way is uſed, let the intermediate trees be pruned away below in good time, in order to accommodate the *principals* freely as they mount and extend. The better way however is, when the wall is tolerably covered, to *extirpate* the intermediate trees, as (when large) they impoveriſh the border, and too much rob the principals of nutriment: If taken up well, in ſeaſon, and pruned properly, they may be planted elſewhere. Something merely *ornamental* may occupy the vacancies alſo, as ſome *double bloſſomed* fruit tree, *paſſion tree*, *roſes*, &c. or in a fine ſituation, a *pomegranate*; any of which may be removed when their room is wanted. See ſection viii. *On planting*.

Plums, *cherries*, and *pears*, may occupy the other walls, the two former at about fifteen, or it may be twenty feet aſunder. *Cherries*, except the *Morella*, will not do well in a full *North* aſpect; but any ſort of *plum* (rather a late one) and ſummer *pears*, and alſo *nut trees* will, if you chuſe to train them. There ſhould always be ſome *currants* and *gooſeberries* in an *E.* and *N.* ſituation, at the diſtance of eight feet, where they will be eaſily *matted*, (when ripe) to come in late, as *October*, *November*, or perhaps *December*. *Pear* trees

of free growth are hardly to be kept within tolerable compaſs on *low* walls; but if attempted, ſhould have at leaſt thirty feet allowed them. The beſt ſorts of *winter pears* deſerve a *ſoutherly* wall to ripen them well, and improve them in ſize and flavour: The gable end of a houſe is well adapted for a pear tree, as it affords room which they require. *Apples* may do on a wall, (and if any on a *good* wall, let it be the *golden pippin*) yet the practice is ſeldom adopted: The ſame may be ſaid of *mulberries*, though they come to bearing much ſooner againſt a wall; but they need not have a *South* aſpect, indeed it has been aſſerted, that they do the beſt in a *North* one. For furniſhing *walls*, chuſe trees of moderate wood, rather than ſtrong, young, well rooted, clean, and healthy.

When the *planting* of a garden is finiſhed, it will be a good way to have a *plan* of it taken, with the names of every peculiar tree marked thereon, in their place, to be aſſured of the ſorts when they come to bear. Some have the names of the trees painted on *boards*, and placed behind them, to which if added the time of ripening (fixed *late* enough) it would tend to prevent a premature plucking by viſitors, &c.

Here it may be obſerved, that if any *evergreen hedges* are deſired, in or about the garden, *yew*, *box*, *alaternus*, *celaſtrus*, *phillyrea*, and *pyracantha*, may be kept low, and clipped in form, if ſo deſired: In addition to which, if a few *roſes* were intermixed, it would have a pretty effect. A *deciduous* hedge for ſubdiviſion, or ſcreen, &c. may be made of *elms* or *limes*, ſetting the larger plants at five feet aſunder, and a ſmaller one between. Or an ordinary fence, or ſubdiviſion, may be quickly formed of *elder* cuttings, ſtuck in at two feet aſunder, which may be kept cut within bounds.

The *walls* come next under conſideration, and they are to be begun from the *beſt wall*; the border of which being regularly levelled and ſettled, the walk is to be governed by it. A *wide* border next the *South* (as was ſaid)

ſaid) is beſt for the trees, and moreover for the many uſes that may be made of it for the ſmaller early, or late tender eſculents, and a few early cauliflowers. For the ſake of a pleaſant ſheltered walk, to have the *South* border narrow may be deſirable; but on no account let it be within ſix feet. Take care that this *walk* is not *ſunk* too much, and that it have a bottom of good earth, as deep as where the trees are planted. Let the body of gravel be thin, and then the roots of the trees will be admitted to run properly under the walk, and find wholeſome nouriſhment; where if they were ſtopped by rubbiſh, they would be apt to canker, and irrecoverably diſeaſe the tree.

The *number* and *breadth* of the walks muſt in a meaſure be determined by the quantity of allotted ground; exceeding in theſe particulars where there is room. But better be few and wide walks, than many and contracted. If the garden is ſmall, one good walk all round is ſufficient; and if long and narrow, the croſs walks ſhould not be many: ſix, or eight feet walks, are not too wide for a moderate ſized garden.

If the ground be laid out in *Autumn*, leave the walks alone till *Spring*, when the earth will be ſettled. *Gravel* laid towards Winter would be diſturbed by the froſt, and the neceſſary work about the quarters and borders. But whenever made, the garden ought to be firſt brought to an exact level, or ſlope; then the walks ſhould be ſtumpt, keeping the tops of the ſtumps very level (as guides) to the *true* pitch of the quarters by a *light* line, made of good hemp, that will bear pulling tight. Proceed to take the earth out of the alleys about eight inches deep, which may be thrown towards the middle of the quarters, to give them a *ſmall* convexity, which makes them look well.

Rake the bottom of the walk level, and lay the gravel to within two inches of the top of the ſtumps. The gravel will ſettle a little, but the walks ſhould always be about three or four inches at their edge,

below the quarters, or theſe will have a flat, and ſo a mean appearance.

If *Edgings* are to be made, in order to ſeparate between the earth and gravel, eſpecially if of ſtone, or wood, or box, they ſhould be done firſt, and they will be a good rule to lay the walks by.

If plenty of *Gravel*, lay it moderately fine: if ſcarce, ſome ſmall ſtones, or rubbiſh of any kind, may be laid in firſt, and rammed down level with a broad rammer; but do not ſpare for a little expence, if gravel can be had, as a thick coat of fine gravel, will bear relaying, or turning over, to refreſh it occaſionally in the ſpring. As the gravel is laid, let the operator neatly rake the larger parts down to the bottom leaving a fine ſurface, in a *ſmall* degree convex, i. e. juſt barely ſufficient to throw off wet: walks that lie high in the middle, are unpleaſant to both eye and feet, and cannot be ſo well rolled, and kept in order.

When *deep* walks of gravel are deſigned, for the ſake of the mould dug out of the alleys, it ſhould be forborne, and laid thin, if any *trees* are deſigned to be planted near the edge; for if the roots of trees have not a good ſoil to ſtrike into, when they reach the walks they will not (as has been obſerved) proſper. In laying gravel very thick, it is a good way to do it at two courſes; the firſt of which may be rough as it comes from the pit, yet ſtill raking the larger parts down, and then ramming or treading it; and the laſt courſe ſhould be of all ſcreened materials.

It is beſt to lay a *few yards* of gravel only at a time, before ramming or treading; after which it may be neceſſary to go over it with a fine iron rake, tooth and back; and then a whole walk being finiſhed, it ſhould be repeatedly preſſed with a moderately heavy roller; and again ſoon after the next rain that falls: ſo will the walks become nicely level and firm, in which their excellence conſiſts.

Graſs

Graſs Walks may do where gravel is ſcarce; but the latter is ſo clearly preferable, that except for a little variety in large gardens where there are many walks, they will hardly be made choice of. They are troubleſome to keep in order, and if much uſed are apt to get bare, and out of level, eſpecially when narrow; they are alſo frequently damp to the feet.

Camomile, has been uſed alſo to form green or carpet walks, planting it in ſets about nine or ten inches aſunder; which naturally ſpreading, the runners are fixed by walking on them, or rolling.

Sand may be adopted for walks, and there is a binding ſort of it, that does very well; but lay not any of it too thick, as it is the leſs firm for it. *Drift* ſand is a good ſubſtitute for gravel.

Coal Aſhes ſtrewed thinly in the alleys are better than nothing, as they at leaſt ſerve to keep the feet dry and clean. If the garden be a *ſtrong* ſoil, theſe aſhes (when worn down) may be thrown out of the walks, with a little of the earth, and will prove a good manure for the quarters.

Sea Shels make very good walks.

All *trees* deſigned to be *planted*, are to be thought of before winter. Thoſe of the *wall* have been ſpoken of; and as to *ſtandards* they muſt have a fair *depth* of good ſoil (not very dungy) to grow in, for it ſhould be remembered, that tree roots in a garden are prevented from running over the *ſurface*, as they do in an undiſturbed orchard. It is neceſſary that ſome caution ſhould be uſed not to dig the ground too near, and too deep about garden trees; leſt looſening the roots, they ſhould not be able to ſtand the wind; and becauſe the nearer the ſurface any root grows, the more and choicer fruit, the tree bears.

But the fewer *ſtandard trees* in a garden the better, as they take up much room, and by their ſhade prevent the proper growth of vegetables that are any thing near them; ſo that if a garden is ſmall, there ſhould

be no trees except thoſe of the *wall*. The caſe is different where there is ample room; and the *bloſſoms* of fruit trees (apples particularly) are ſo delightful, that if they produced nothing for the palate, there would be a ſufficient inducement to plant them for ornament; but let them be dwarf ſtandards, in preference to eſpaliers.

Dwarf-ſtandards occaſion leſs trouble to keep them in order than eſpaliers, and are (generally) more productive; for *Eſpalier* trees are ſeldom managed well, and thus appear unſightly; at beſt they are ſtiff and formal, and obſtruct the ſight in viewing the quarters of a garden, which (if in order,) are worthy of coming under the eye: the violence done to nature, to keep eſpaliers in form, is commonly paid by pains and diſappointment. A writer of repute obſerves, *apples* on *French* paradiſe ſtocks, planted at eight or nine feet diſtance, pruned and kept in an eaſy manner, make a fine appearance, and produce better fruit, and in greater quantities, than when they are in eſpaliers: *Dutch* paradiſe ſtocks however laſt longer, and are altogether ſuperior. For managing *Dwaf trees*, ſee *Pruning*.

If *Eſpaliers* are planted, let them be only fruit of the beſt ſorts, and in *ſpacious* gardens, where they may have a good length and height allowed them to grow freely; and let it be reſolved to do the buſineſs *neatly*. If they may have nothing better than poles or ſtakes to be trained to, let them at leaſt be ſtrait, and of ſome equality in ſize, as to height and thickneſs, ſmooth, and not too clumſy for the purpoſe; fix them well in the ground, upright, and about nine inches aſunder; at firſt only four feet from the ground, and raiſed as the trees advance in height. Apples on *paradiſe ſtocks* beſt ſuit for eſpaliers in ſmall gardens, and pears on *quince ſtocks*, as they maintain a ſmall ſize; but they are apt to decay by the cutting they muſt have, and ſo do not prove enduring trees.

Eſpalier

Eſpalier trees ſhould rather be trained to *ſawed* materials properly framed together, ſmoothed and painted. But for a year or two, they may be faſtened to light ſtakes, when they will have formed a head, to begin to train them for bearing in the *neat* manner propoſed; i. e. to ſlips of deal joined to light oak poſts as *trelliſes*. Whether the ſlips be placed perpendicularly, or longitudinally, ſeem indifferent. If the longitudinal mode of training be the beſt approved, ſtrong iron *wire* may be recommended to run through the poſts, inſtead of ſlips of wood, as it ſhades leſs and is ſtronger and neater. If upright ſlips are uſed, they ſhould be ſlender, and from ſix to eight inches diſtance, according to the greater or leſs freedom of the natural growth of the tree. The height may be alſo according to the nature of the tree, from five to ſix feet; and it will not anſwer to have them lower. Only a moderate length of *trellis* (on each hand) need be fixed at firſt, and ſo additions made as the tree extends. The poſts may be about four feet aſunder, the firſt on each hand being two feet, or a yard, from the ſtem of the tree.

Apples ſhould be allowed twenty-four feet and *pears* thirty; except thoſe graffed on paradiſe or quince ſtocks, for which little more than half this diſtance may do. *Cherries* and *Plums* ſhould have about eighteen or twenty feet allowed them. *Quinces*, *medlars*, *mulberries*, and *filberds* may alſo be eſpaliered. The trees ſhould be planted about a yard from the edge, but farther off were better, if the walks lie deep of gravel or poor materials.

The *Breda*, and *Bruſſels* apricots, have ſucceeded in eſpaliers, as alſo in dwarf and full ſtandards; but the general climate of the place muſt be mild, and the ſituation they are planted in muſt be very ſunny and well ſheltered: The fruit from ſtandard *apricots* is very fine, and abundant; but they come not to bearing under ſeveral (ſometimes ten or twelve) years.

Currants,

Currants, *gooſeberries* and *raſpberries*, do well eſpaliered, as to a production of early and fine fruit.

Trees of a more humble nature, and *ſhrubs*, next occupy attention in furniſhing a garden. *Currants* and *gooſeberries* (as buſhes) ſhould be planted three feet from the edge, and full ſix feet aſunder. Some of theſe very uſeful ſhrubs ſhould grow in every aſpect of the garden, in order to have a ſucceſſion of their fruits, as long as may be. Thoſe who chooſe to plant whole quarters of *currants* and *gooſeberries*, ought to do it at ſix feet aſunder in the rows, and the rows eight feet from one another.

Raſpberries may be ſet in plantations, in rows five feet aſunder allowing three feet between the plants. Though theſe ſhrubs are beſt by themſelves, yet here and there by the walks a detached bunch may be kept, or here and there one againſt a warm wall. Between rows of *raſpberries* planted at the above diſtance, *coleworts*, early *cabbages*, *cauliflowers*, *and lettuces* may be ſet, or *ſpinach* ſowed in drills, the raſpberries having had their pruning and dreſſing early in Autumn, for the purpoſe. Every year a little ſhort manure, dug in cloſe about the roots, (and deeper as the plantation gets older) will inſure fine fruit. Raſpberries are not very nice as to ſoil and ſituation; but the *twice bearing* ſort ſhould have a dry ſoil and warm birth to forward the crops, that the *laſt* may be in time: See that the plants to be ſet have good bruſhy roots, and two or three eyes to each root near the ſtems, for the next year's bearing. The ſmooth wooded, or *cane* raſp, is to be preferred for a principal crop.

Strawberries may be planted at the *edges* of borders and quarters, either in ſingle or double rows, (rather the latter) for the convenience of gathering, and for ornament; but the common and beſt way is, in four feet *beds*, with eighteen inch or two feet alleys, on which beds may be five rows of the *wood* and *Alpine*, four of the *ſcarlet* and *pine-apple*, three of the *Carolina*,

rolina, and two of the *Chili*; ſetting the plants at the ſame diſtance in the rows, as the rows are from one another in what is called the *quincunx* order. In a good, cool, loamy ſoil, which ſuits them beſt, a little more diſtance may be allowed the four firſt ſorts; and in quite a dry light ſoil, ſomewhat leſs, that they may ſhade one another the better from drought.

The beſt *ſituation* for ſtrawberries is an open and ſunny one, as thus they bear more, and finer flavoured fruit. Some of the *ſcarlets* ſhould be planted under warm walls to come early. The *woods* bear ſhade as natural to them, and the *alpines* do tolerably well in it: As lengthening the ſeaſon of fruit is a deſirable circumſtance; for theſe three ſorts (at leaſt) the ſituation ſhould be various.

The moſt proper *time* for planting the ſtrawberry is the *firſt* moiſt weather in *September*, (or even earlier) that they may be eſtabliſhed in the ground before winter, and they will bear the better the firſt year: Froſt is apt to throw up late planted ones, and injures, if not deſtroys them. Thoſe planted in ſpring often ſuffer from drought, and bear very little the firſt year, except the *alpines:* Chooſe *forward* runners for planting, and let them be from beds in full bearing, i. e. of two or three years old; for plants from old beds are not ſo fruitful: Take care alſo they come from beds producing fruit good in its kind, and true as to ſort: Much depends on this, ſee *Nurſery*. Preſs the mould to the roots, give them a watering, and again once or twice, if the weather proves dry. Some gardeners let them *run* over the beds, which in a dry light ſoil, may be proper; but in this caſe, a greater diſtance ſhould be allowed them at planting.

If the *alpine* ſort be planted on a warm border, eighteen inches aſunder, and ſuffered to ſpread, the firſt *runners* will fruit the ſame year, and ſometimes this *prolific* ſtrawberry bears till *November*.

Freſh

Freſh *plantations* of ſtrawberries ſhould be made every fourth year, though in a good ſoil, and with good management they will continue longer; ſo that where they are ſuffered to *run*, the plants being frequently renewed, and old ones removed, beds have borne tolerably for ten years. Some gardeners inſiſt that this ſpreading mode is the beſt way of cultivating the ſtrawberry. In a *dry* ſeaſon, ſuch full covered beds have the advantage; but in a *wet* one, the fruit is apt to rot, though ſtill in ſuch a ſeaſon, it is cleaner than from plants growing in an open way; but this carries the appearance of, (and rather argues) neglected culture. See the ſections, *nurſery*, *pruning*, and *fruits*. The method of keeping them in *detached* plants produces the largeſt and beſt ripened fruit, and on the whole is preferable; for which practice there cannot be a ſtronger argument, than that thoſe follow it, who cultivate the ſtrawberry for ſale. See ſection 17.

The *watering* of ſtrawberries ſhould not be neglected, doing it almoſt daily, when in flower and are ſetting their fruit, if the weather proves dry, particularly to thoſe under a warm wall; but this is not to be continued when the fruit is nearly ripe, which would ſpoil the flavour, and diſpoſe them to decay.

Flowering Shrubs may be diſperſed about, and herbaceous *perennial flowers*; but plant them not too near the edge, leſt they hang over the walks: The *bulbous* ſorts may however be within ſix inches.

Aſparagus and *artichokes* ſhould be thought of, but they take up much room, and in *ſmall* gardens may therefore be left out. It will be of little uſe to have leſs than fifty or ſixty feet of *aſparagus* beds, as there would be ſo few heads to cut at a time; and *artichokes* muſt be planted wide, or they will not grow large and fleſhy, in which their merit conſiſts.

Let not *pot herbs* be forgot, but provide a general *herbary* in that part of the garden which is moſt contiguous to the kitchen.

Having ſpoken of *ſtationary* things, the *routine* of the *ſeaſons* muſt dictate the reſt; and the inclinations of the palate will refreſh the memory to take care of providing the moſt neceſſary and agreeable *eſculents* for dreſſing, and raw *ſallads*.

Perennial flowers have been mentioned; but let *fancy* direct as many *annuals*, and *biennials* to be cultivated, as room can conveniently be found for, that the garden may be, as much as poſſible, ornamented.

In *furniſhing* a garden with *ſhrubs* and *flowers*, reſpect ſhould be had to their uſual *height*, their *bulk*, *colour* and *ſeaſon*, (ſee ſection 19) that the mixture may be properly varied, harmonious to the eye, and come in regular ſucceſſion. The *latter* end of the year is ſeldom provided for ſo well as it might be; *late* flowers ſhould be ſet in warm ſituations, as their proper place. In the moſt dreary months, by judicious planting, *evergreens* in their neat and cheerful "winter liveries," may be viewed from our windows, and ſerve inſtead of flowers.

Thoſe who garden upon a *large* ſcale, ſhould take care to have every thing proper and convenient liberally provided. Let there be a well ſituated place for *hot-beds*, with ſome building as a *tool houſe*, and (if dry) for keeping *bulbs*, *ſeeds*, and *herbs*. Thoſe alſo who garden even upon a *ſmall* ſcale will do well to have *every* needful implement: It is the way to ſave time and labour, and have work done well.

If *water* can be introduced, and kept *clean* with verdant banks around it, it would be found very uſeful where a garden is large: but let it be near the center as poſſible, as the moſt convenient ſituation. It ſhould be fed from a ſpring, and (if it could) be made to drip in the reſervoir, becauſe its trickling noiſe is agreeable in a garden to moſt ears.

Mixed Gardening, as comprehending the *uſeful* with the *ſweet*—the *profitable* with the *pleaſant*, has been the ſubject hitherto; but if the *flower garden* and the *kitchen*

kitchen garden are to be diſtinct things, the caſe is altered; not ſo much indeed, but that ſtill the *kitchen garden* ſhould be adorned with a ſprinkling of the more ordinary decorations, to ſkirt the quarters, chiefly thoſe of the moſt powerful ſweet ſcents, as *roſes*, *ſweet-briars*, and *honey-ſuckles*, *wall-flowers*, *ſtocks*, *pinks*, *minionet*, &c. in order to counteract the coarſer effluvia of vegetables, or of dead leaves, which, however, ſhould not be ſuffered to annoy.

The *flower garden* (properly ſo called) ſhould be rather *ſmall* than large; and if a ſeparate portion of ground be appropriated for this, only the *choiceſt* gifts of *Flora* ſhould be introduced, and no trouble ſpared to cultivate them in the *beſt* manner. The beds of this garden ſhould be narrow, and conſequently the walks numerous; and not more than one half, or two thirds the width of the beds, except one principal walk all round, which may be a little wider. The gravel (or whatever the walks are made of) ſhould lie about four inches below the edge. The beds for *tulips*, *hyacinths*, *anemonies*, *ranunculuſes*, &c. may be three and a half, or four feet wide, and thoſe for ſingle flowers the ſame, or only two and a half feet wide in the borders; which was the moſt uſual breadth in the *old* flower gardens. Let the beds lie rather rounded in the middle, but the walks flat.

Figured parterres have got out of faſhion, as a taſte for open and extenſive gardening has prevailed; but when the beds are not *too* fanciful, but regular in their ſhapes, and chiefly at right angles, (after the *Chineſe* manner) an aſſemblage of all ſorts of flowers, in a fancy ſpot of about ſixty feet ſquare, is a delightful home ſource of pleaſure, worthy of purſuit. There ſhould be neat *edgings* of *box* to theſe beds, or rather of neat inch *boards*, painted lead colour, to keep up the mould. Be ſure to keep the box from the very firſt (as ſoon as rooted) and always after, as low as poſſible: Clip it twice a year, April and July.

An

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An ORCHARD may be ſpoken of here; i. e. a ſpot to plant *ſtandard* fruit *trees* in, which are forbidden a place in the garden; but it muſt not be a ſmall ſpot. The front row, ſhould be *half* ſtandards, or before theſe may be a row of *dwarfs;* obſerving to plant the moſt *towering* ſorts (in kind) of the *full* ſtandards behind. The ground ſhould be dug thoroughly as low as the proper ſoil is, and if not naturally good, let it be improved by *dung* duly rotted, and worked well in a full ſpade deep. In a ſtrong ſoil, *lime* ſhould make a part of the manure. If the ground be naturally *uneven*, it will not be proper to level it, as this would rob the higher parts, and needleſsly enrich the lower. A ſtrong cool ſoil does beſt for an *orchard*, but it muſt not be wet. If it holds up water, it ſhould be well drained by deep covered trenches.

A piece of ground deſigned for an *orchard*, would be greatly improved by firſt cultivating it as a *kitchen garden* for a year or two, manuring well at the time: Or, give it a good tillage; let it have a winter's froſt, by deep trenching into high ridges, turned over in ſpring, and ſummer fallowed. The trees being planted, at proper diſtances, the ground may be kept under ſome ſort of crop, for ſeveral years to come, with ſome annual dreſſing. In a large orchard, the plough may be uſed for *corn*, *potatoes*, *carrots*, &c. If the ſoil is poor, frequent opportunity ſhould be taken to give it a little manure, that there may be proper food prepared for the roots, as they extend: No doubt many orchards would bear much better, if the whole ground (as the roots extend far) were before winter dug or ploughed over every ſecond, or third year, and dreſſed, by digging in ſome rotten dung, or ſprinkling over the whole (when rough dug) foot and pigeon's dung, or that of any other poultry; this will waſh in by rains

rains and ſnows, and do much good. Or if an orchard were ploughed, or rough dug, every year, immediately after the fall of the leaf without manuring, it would be very beneficial; for it is not adviſeable to give trees *much* dung.

The *thinning* of the branches of orchard trees, by an occaſional uſe of the ſaw, bill, chizzel, or knife, ſhould not be neglected, that the air may have free courſe, and the ſun acceſs among the branches: This is more eſpecially neceſſary in thick planted orchards, and the benefit of proper pruning is *very* great, though it is much neglected. See *Pruning of Standards*, Section XII.

To ſucceed well, *apples* and *pears* ſhould be planted from thirty to forty feet aſunder, and *cherries* and *plums* from twenty to thirty, according to the richneſs of the land. The *walnut* ſhould be rather planted ſingly; but if in a number together, ought to be forty feet aſunder for *fruit*, and thirty for *timber*. See *Nurſery*. Theſe diſtances appear great, but it is neceſſary, as after a few years cloſer planting would be found evident. See *planting* and *pruning*, Sect. 9, 12.

If the *intermediate* ground is not cultivated, as before recommended, ſome ſort of fruit (as *cherry*, *plum*, or *codling*) or young foreſt trees may be planted, to be removed in time; or currants, gooſeberries, &c. it may be kept alſo in graſs, the trees thorned, and ſmall cattle turned in; which graſs, as it comes early, will be found particularly uſeful to thoſe who have much ſtock. On this ſubject, however, it may not be amiſs to give the inſtructions of one of our beſt gardeners.

It is an error (ſays he) to let *turf* cover the ſurface of the ground in an orchard. The trees ſhould be at ſuch diſtances, that a *plough* may go between them, and in that caſe the trees thrive every way better; the breaking of the ground ſerves as manure without its rankneſs, and the *ſun* and *air* have free paſſage, which is very eſſential to the good taſte and well ripening

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ing of the fruit. Where the plough cannot be uſed, dig the ground a full ſpade deep, picking out the roots of weeds.

The beſt *manure* for an orchard, is a mixture of two parts dung and one part coal-ſoot. Let this be blended carefully, and ſpread all over the ground, between the trees, not piled up in heaps juſt about their ſtems, according to the old practice.

The *cultivation* of the ground about the trees in an orchard, is more neglected than any other part of the gardener's buſineſs, yet there is not any thing more neceſſary. *Hill.*

SECTION IV.

OF THE CULTIVATION OF A GARDEN.

THE *cultivation* of a garden includes the doing all thoſe things that are neceſſary, in order to a reaſonable and prolific *production* of the various vegetables, fruits and flowers, we are diſpoſed to propagate.

The *ſoil* muſt be firſt attended to, always to keep the fruit borders in heart, and the quarters in a proper *ſtate* for uſe, when called upon to receive either ſeeds or plants. Ground ſhould never lie long without ſtirring; for the ſoil of a garden, *ſhould* be in a *free*, *ſweet*, and *rich* ſtate, by proper digging, &c. or no great things can be done, as to forward, handſome, or well flavoured productions. It ſhould be *free*, that the

the roots of plants may not be impeded in the queſt of food; *ſweet*, that the food may be wholeſome; and *rich*, that there may be no defect of nutriment.

Trenching the vacant ground in a garden, does good to all ſoils in the *autumn* and *winter* ſeaſons, and that in proportion to its ſtrength being indiſpenſibly neceſſary for clays to ſeparate and ameliorate the parts: The light ſoils may do by being only *rough* dug, which is a method that ſtronger ſoils will be alſo benefited by. The *ſoil* would be ſtill farther improved, by re-trenching, or rough-digging, once or twice more in the winter, if the opportunity offers, particularly if ſtrong or ſtubborn. Let the ridges lie E. and W. except the ground be a ſlope, when they may be in the direction that does.

When *manure* is applied, the ground is not to be *glutted* with dung; for a little at a time, well-rotted, is ſufficient, ſo that it comes often enough, as opportunity, and the nature of the cropping may dictate. It is indeed a ſort of *rule* with gardeners, that ground ſhould be dunged every ſecond year; but circumſtances may make more or leſs of it neceſſary, and rules ſhould never be *indiſcriminately* applied. If dung is pretty well reduced (as it were to earth) much leſs will do, and let it not be buried too deep; but if it is otherwiſe, lay it low, to be dug upwards another time, when it is more conſumed.

It is an *excellent* way of manuring, eſpecially where the ſuperficial ſoil is much exhauſted, to ſpread over rotten dung, late in autumn, in the winter, or early in ſpring, and ſo let it remain, till the ground is wanted, before it is dug in; which ſhould however be ſlightly dug before the manure is put on, or forked in a little afterwards. This method is particularly to be recommended where crops of *onions*, *leeks*, and ſuch ſuperficial rooting plants are to be.

Dung uſed in great quantities, and lying in lumps, breeds worms, grubs, and inſects, and makes plants grow

grow too rampant and rank flavoured. *Carrots* it cankers, and it disagrees with many things; it is apt also to make the ground parch, and burn the crops sown upon it in a hot summer. On these accounts some persons have been induced to dress their gardens *only* with rich fresh *earth;* which, if they do not over-crop, will do very well, being accompanied with good *tillage;* which alone is of much use and is essential to due cultivation. *Vegetables* are always *sweeter*, the less dung is used, and little need be used, when the natural soil is good and deep; for the earth may be so dug, that what is at the top one year may be at the bottom the next: which is a *manœuvre* evidently advantageous, as a good part of the strength of the top soil washes downwards: The method just recommended, of letting dung lie on the surface for a time, is good also, as it abates the rankness of it.

If the ground is in proper *heart*, every spot may be contrived to be *constantly* and successfully cropped. The common gardeners about *London*, and other great towns, who give high rents for their land, contrive (manuring well) a *succession* of crops, one under another very dexterously; and this sort of conduct should be imitated by private persons. Thus a little spot, in skilful and industrious hands, shall be much more productive than a much greater under contrary management: But when hard worked, the soil will not do without a good deal of dung.

A *caution* must be observed, for if plants grow *crowding* thick, it defeats the end in view; and *fruit borders* must not be *much* cropped, furnishing them chiefly with small plants, of short duration, and superficial growth, lest the roots of the trees be too much robbed and shaded.

Have an eye on *vacant ground*, either for immediate use, or to prepare it for future.

In the occupation of ground, the *change* of crops will be proper, as each sort of plant draws a *somewhat* different

different nouriſhment: ſo that after a full crop of one thing, one of *another* kind may often be immediately ſown; but it ſhould be contrived that a wide crop may follow a cloſe one, and contrariwiſe.

Cloſe crops, as onions, leeks, carrots, &c. are conveniently and neatly cultivated in *beds* of from four to five feet widths, with alleys of a foot to eighteen inches between them.

The *ſeaſons* proper for furniſhing the ground with every particular vegetable, ſhould be well attended to, that each may be obtained as *early* as its nature will permit; and of the *ſeeds* and *plants* we uſe, care muſt be taken to procure the *beſt* of the kind, leſt after all the trouble of cultivation, diſappointment as to quality ſhould enſue.

The *quantity* ſown and planted is (in a degree) to be determined by the portion of ground that can be ſpared; but it ſhould be always a *rule*, to ſow and plant *more* than probably enough, as more may happen to be wanted than expected, and a croſs ſeaſon or other accident, may occaſion a failure. As exact rules cannot be laid down, the exerciſe of a little *judgment* will be neceſſary, in order to *proportion* crops aright; for to have too much of one thing, and too little of another, is diſagreeable, and diſcreditable. Reſpect ſhould be paid to the natural duration of crops, ſome going off ſoon, and others being laſting, and that too according to the ſeaſon they are propagated in. See, *Of propagation*, in the next ſection.

Seeds and *plants* ſhould be *adapted* as much as poſſible to the *ſoil* and *ſituation* which beſt ſuits them; for in the ſame garden ſome difference will be found, not only as to ſun and ſhelter, but the earth; as ſome will be richer, ſome poorer, ſome deeper, ſome ſhallower, and ſome (perhaps) heavier, ſome lighter, in due attention to which, advantage is to be reaped.

Let the ground really on all occaſions be *well dug*.

Weeding

Weeding in time is a material thing in culture, and *ſtirring* the ground about plants, as alſo *earthing up*, where neceſſary, muſt be attended to; and in ſome caſes preſſing the mould to the ſtems of vegetables will be proper, for their better ſupport. Earthing up well before winter froſt ſets in, preſerves plants, forwards, and improves them. Weeds exhauſt the ſtrength of the ground, and if they are ſuffered to ſeed and ſow themſelves, may be truly called, "*garden ſins:*" The *hand* and *hoe* are the inſtruments for the purpoſe; and where the trouble is not *too* much, the former will generally be the beſt, when it is not thought neceſſary to ſtir the ground; which indeed may be done afterwards, when all is clean, to better purpoſe. *Digging*, where the ſpade can go, between the rows of plants is a good method of deſtroying weeds, and as it cuts off the ſtraggling fibres of growing roots, they ſtrike afreſh, in numerous new ſhoots, to the great benefit of the plants. Deep *hoeing* gives a degree of fertility to the earth. Breaking the ſurface will keep the ſoil in *health*; for when it lies in a *hard* or bound ſtate, enriching ſhowers run off, and the ſalubrious air cannot enter.

The *thinning* of ſeedling crops ſhould be done in *time*, before the young plants have drawn one another up too much. All plants grow ſtronger, and ripen their juices better, when the air circulates freely round them, and the ſun is not prevented from an immediate influence; an attention to which ſhould be paid from the *firſt* appearance of plants breaking ground.

In thinning *cloſe* crops, as *onions*, *carrots*, *turnips*, &c. be ſure that they are not left too near, for inſtead of reaping a greater produce, there would aſſuredly be a leſs. When they ſtand too cloſe, they will make tall and large tops, but are prevented ſwelling in their roots: better to err on the *wide* ſide, for though there are fewer plants they will be finer.

In the *pricking* and *planting* out of crops, be ſure to do it as *early* as may be; let every thing be regular, (not ſparing to uſe the *line*) allowing always *room* enough for this work; and being thus treated, vegetables will come forwarder, larger, and of a ſuperior flavour. Theſe advantages are ſeen in all things, but in *lettuces* particularly, which often have not half the room allowed them they ſhould. *Over cropping* robs the ground of ſtrength to no purpoſe, except increaſing the dunghill; it makes it alſo inconvenient to weed, rake and clean up, which in a *private* garden (at leaſt) it is proper frequently to do.

Dibble planting, as being eaſy and expeditious, is the common way of ſetting out plants by; but (except indeed quite ſmall ones) they are beſt put in by a ſmall *ſpade* or *trowel*. In the former method, the roots are frequently doubled and diſtorted, ſo as to receive (at leaſt) a great check, if not to occaſion a failure, when ſo put out towards winter; but in the latter way the roots lie free and eaſy, and preſently eſtabliſh themſelves in health and ſtrength. There is more in this than gardeners in general allow of. Ground deſigned to be planted, is beſt dug a day or two before wanted.

Watering is a thing of ſome importance in cultivation, though not ſo much as many make it. It is a moot point, whether more harm than good is not *on the whole*, done by it, when it is thought *generally* neceſſary in a dry ſeaſon. In a large garden, it is an *Herculean* labour to water every thing, and ſo the temptation generally prevails either wholly to neglect it, or to do it irregularly or defectively. To water nothing is too much on the dry ſide: but there is ſuch a thing as watering *too* much, which ſpoils the flavour, and makes eſculents leſs wholeſome.

But *watering* will aſſuredly benefit ſome things; as (ſparingly) new planted trees, flowers and vegetables. Watering is of uſe to ſettle the earth about the roots of plants newly ſet, for it is by a cloſe union, (as it

were) of the earth with them, that they profper. The watering of new planted things may be to be repeated, but it fhould not be done very often, as it is then apt to ficken, and rot the young roots. As foon as they are believed to have got hold of the ground, defift from watering. When any plant is towards *flowering* then moifture is more neceffary.

Shading of new planted things, particularly flowers, is of much benefit, and that in proportion as the feafon is funny. So that the imitating a cloud by a fhade, is evidently proper, and frequently neceffary to the life of the plant, as neglecting this bufinefs has frequently proved: as a little water in a cloudy time does plants much good, fo when fhaded.

Strawberries and *Cauliflowers* are generally watered in a dry feafon; that is, the ftrawberries, when in bloom, in order to fet the fruit, and the cauliflowers, when they fhew fruit, in order to fwell the head: In a light foil this ought particularly to be done. In very dry weather, *afparagus feedlings*, early *turnips*, *carrots*, *radifhes*, and *fmall-fallads* will need watering. *Slips*, *cuttings*, and *layers* of any kind will need water. *Pots* of flowers *muft* have it frequently.

When *watering* is undertook, let it be a *complete* bufinefs; i. e. to the bottom and extent of the roots, as much as may be. The wetting only the furface of the ground is of little ufe, and of fome certain harm, as it binds and cracks the earth, and fo excludes the benefit of fhowers, dews, air and fun, from entering the foil, and benefitting the roots as they otherwife would do. Wetting the furface of the ground, (however) in a fummer's evening, as it makes a cool atmofphere, a dew is formed, which pervades the leaves, and helps to fill their exhaufted veffels.

Watering the roots of *wall-trees*, (if dry weather) when the fruit is fetting, is by fome thought neceffary. The beft way to do this effectually, is to make a few holes at fome diftance from the tree with a fmooth

ſharp pointed ſtake, the better to let the water down; but this may wound the roots, and ſhould only be practiced in a light ſoil, and *very* dry ſeaſon. To young trees only it can however be of uſe, for the roots of old ones run far and wide; and it is the ſmall fibres of theſe diſtant roots, on which the tree chiefly depends for food. *Vines* ſhould have no water till they are off bloſſom, (*July*) and the fruit as big as large pins heads; and then if the ſeaſon be very hot and dry, watering the roots twice a week will help the fruit to ſwell.

An *engine* to water the leaves of vines, and all other wall trees in a ſummer evening, refreſhes them much, and helps to rid the trees and wall of inſects and filth. Late in the ſummer, when the nights begin to get cold, it is time to leave off all watering, except things in *pots*, and *frames*, which ſhould have it then only in the morning. As watering is apt to make ground hide-bound and unſightly, let the *ſurface* be occaſionally ſtirred and raked, which will make future waterings enter the ground the better: when the ground is hard on the top, the water runs away from its proper place, and half the labour is loſt. Many things are impatient of being kept wet about the ſhanks, and therefore watering ſhould be generally at a little diſtance.

The *quality* of water uſed for refreſhing plants is a material thing, and it is very various in its nature, according to the peculiar earths and mineral ſubſtances, that it paſſes through. *Rain* water is by far the beſt, as appears by the verdure and vivacity it gives: It is nouriſhing, as being full of vegetable food.

River water is next in fitneſs, and pond water follows. *Well* water is of leaſt account, though local circumſtances occaſion its uſe the moſt. So that in forming a judgment concerning watering, it is not ſimply to be conſidered, whether plants *ſhould* be watered; but whether with *well* water, and that too from a pump. Pump water, if uſed directly (to ſay nothing of it's hardneſs) is ſo *cold* in ſummer, that the roots feel

feel an extreme ſenſation; for as they are then warm, through a lively fermentation in the earth, great cold ſo contracts their veſſels, that they perform their proper offices with difficulty, and become diſeaſed.

Hard water is ſoftened by throwing in a little *dung*, *lime*, *marle*, or *earth*, and rather that of a *loamy* nature, or *clay*, which will greatly fit it for uſe. Some perſons keep *chalk* in wells, ciſterns, &c. to ſoften the water; and others have kept hard water on bruiſed *oyſter-ſhells* a few days in a tub, with a view to watering flowers, &c. others have put a bag of *barley* in it, finding the water that has been uſed in *malting*, is rendered very ſoft, though ever ſo hard when put on the grain. Freſh *bran* ſoftens water much, ſtirring it up now and then for a day or two. At any rate, however, let hard water ſtand expoſed to the *ſun* and *air*, as long as may be; a few hours will improve it, but a few days will better qualify it for vegetation.

Water is ſometimes *enriched* with dungs and ſalts. Some experiments of putting a ſmall quantity of *nitre* into water to keep flowers flouriſhing in phials, and rooted plants in pots, appear to prove beneficial. That coarſer way of impregnating water with *dungs* may be uſeful to pots of plants that are too full of roots, or to any thing growing in a poor ſoil; but the water ſhould not be made *too* rank, or ſuffered to touch the leaves; it ſhould ſtand alſo in the *ſun* two or three days, and be ſtirred up now and then. *Sheep's-dung* for the purpoſe, is to be preferred, though others may do. Let the *rule* be, to impregnate the water about an equivalent of an ounce of ſea-ſalt to a gallon: A ſtronger mixture might do miſchief; yet a rich one poured plentifully on old *aſparagus beds* in autumn and ſpring would do much good.

The MANAGEMENT of a garden, as ſomewhat diſtinct from the cultivation of it, is an object of conſequence; i. e. to keep it in ſuch ORDER, that it may not fail in thoſe general impreſſions of *pleaſure* it is capable

of affording, when things are ſhewn in their *beſt* manner. A garden may be cultivated ſo as to be *profitable*; and yet not conducted ſo as to be *agreeable* to walk in, which in a private garden is a circumſtance ſurely to be lamented: The *proper* appearance of a *well* managed one is expreſſed by the word NEAT: Let all be done that *can* be in order to it.

To be *neat*, weeding muſt be induſtriouſly followed up, and all litter that is made in working, quickly carried off. The ground alſo ſhould be frequently ſtirred and raked between crops, and about the borders, to give all a *freſh* appearance. There is a pleaſantneſs to the eye in new broken earth: and when there are no flowers left in the borders, this gives an air of culture, and is always agreeable: The obſervation is particularly meant to apply in *autumn*, that the garden may not become dreary *too* ſoon, and ſo bring on winter before its time. An *Aſparagus fork* is expeditious and uſeful in this caſe; but it muſt be ſlightly uſed, leſt it diſturb the roots of plants too much. Vegetables ſhould not be ſuffered to rock themſelves by wind, ſo as to form holes round their ſtems, but be well earthed up (49) or otherwiſe ſupported.

Trees and *ſhrubs* ſhould be conſtantly freed from ſuckers and dangling ſhoots, and wall trees ought to be regularly kept in order agreeable to directions in the ſection, *On pruning*.

Let *gravel walks* be kept free from *weeds* and *moſs*, often ſwept, and well rolled after rain. If there is quantity of gravel enough in the walks to relay, or turn them up every ſpring, or once in two years, it will thoroughly clean them, and make them appear lively. *Moſs* may be either ſcraped off with a trowel, or ſome ſuch inſtrument, or rubbed off by repeated ſtrokes of a broom not quite new.

Graſs plats and *walks* ſhould have their edges occaſionally cut, and be mowed, as often as there is the *leaſt* hold for the ſcythe, for they loſe much of their beauty,

beauty, when the grafs gets long; leaves fhould not be fuffered to remain on them as it ftains the grafs; and worm cafts fhould be cleared away.

Edgings of all forts fhould be kept in good order, as having a fingular neat effect in the appearance of a garden. The dead edgings will fometimes, and the live edgings often want putting to rights; either cutting, clipping, or making up complete. Where there are no edgings, or but weak ones, let the earth bordering on the walks be kept *firm*, and now and then worked up by a line in moift weather, beating it fmooth with the fpade.

Some *fruits* may need fupport, by tying their weak branches when they get heavy, to ftakes, &c. Rows of *raſpberries* and *beans* are kept neatly up in their lines, by putting in here and there a ftake, and ufing packthread lengthwife; and thus will they bear better, and be more conveniently gathered. *Strawberries* of fine heavy forts, will be preferved from getting dirty and rotten, by tying their ftems to little ſticks; by this practice the fruit alfo gets better ripened, and of a finer flavour: Some perfons lay tiles, or mofs round the plants, when the fruit is half grown; but this is not (generally) fo well, only it has the advantage in keeping the ground cooler in a hot feafon. The firft and fineft *fcarlets* beft deferve this trouble.

Flowers fhould be frequently feen to, to *tie* up, and *trim* off dead and dangling parts. Some of them cannot do without fupport, and many forts are made more fecure and beautiful by proper ties. If this bufinefs is neglected, a heavy rain or ftrong wind may come, and lay all proſtrate, efpecially about the *equinoctial* feafons; but weaknefs or their own weight, will often bring flowers down.

The *ſticks* ufed for flowers, fhould be of fmooth wood, as *hazle* or *fallow*, or of neat painted ſlips of *deal*, with or without an ornamental head; white is the beft colour, on account of its contraft with the leaves.

New *baſs* wetted, fine ſoft *packthread*, or green *yarn* are proper for the ties, which ſhould be twiſted firſt round the ſtick, and then round the flower: let the ends of the ſtring be cut off cloſe. The ſticks ſhould have ſmooth and ſharps points, otherwiſe they may damage the roots, and will not hold ſo faſt in the ground; thruſt them in as far from the ſtem as conveniently may be, and let attention be paid to *bulbous roots* not to go ſo near as to wound them. Do not think of forcing all the branches of a large buſhy head to a ſingle ſtick; but let two or more be uſed, as may appear neceſſary, obſerving that there is ſomething of an equality of ſize in the ſticks uſed to the ſame flower.

Some perſons are very *incurious* about their flower ſticks, which may rather be called *ſtakes*, even when applied to the ſmaller ſort of plants. Sticks may alſo be too weak for large ones, and a due *proportion* is therefore neceſſary to propriety and neatneſs.

Decaying flowers ſhould be timely trimmed or removed, and *perennials* ſhould be regularly freed from the parts running to *ſeed*, (except ſo much as may be wanted) as the production of ſeeds weakens the root much; ſometimes even cauſing death, and thus many curious perennials have been loſt, eſpecially the firſt year of planting them. To *preſerve* any particular ſort therefore, let the ſtems be cut down as ſoon as the flowers appear to be *going* off, or to ſecure the root in ſtrength, let them not flower at *all* the firſt year.

Vegetables decaying are offenſive, and thoſe prematurely ſpindling, and ſuperfluous ones, ſprouts, &c. running for ſeed, ſhould not be ſuffered to continue in the ground (as they often are) to exhauſt its ſtrength, and look unſightly.

The *management* of a garden (ſummarily ſpeaking) conſiſts in *attention* and *application*; the firſt ſhould be of that wary and provident kind, as not only to do well *in* the preſent, but *for* the future; and the latter ſhould be of ſo diligent nature as (willingly) "*Never*

to

to defer that till to-morrow which may be done to day;" ——*Procraſtination* is of ſerious conſequence in *gardening*; and neglect of times and ſeaſons is fruitful of diſappointment and complaint. It will often happen, indeed, that a *gardener* cannot do what he *would*; but if he does not do what he *can*, he will be moſt juſtly blamed, and perhaps cenſured by none more than HIMSELF.

SECTION V.

OF PROPAGATION.

PLANTS are propagated by *ſeeds*, *ſuckers*, *ſlips*, *offſets*, *diviſions*, *cuttings*, *layers*, and *graffs*.

By *ſeed* is the moſt general method of propagation, and plants raiſed any other way are ſeldom ſo fine. Thoſe plants from ſeed which have never been removed, are commonly handſomer, and come forwarder, than thoſe that have been tranſplanted, provided they were ſown in a proper ſoil and ſituation.

As upon ſeed being right in kind and good in nature, depends the ſucceſs, care ſhould be taken to procure the beſt, and no temptation ſuffered to prevail for the uſe of an inferior kind, or of one only ſuſpected of being ſo, if it can be helped; for to cultivate a ſoil, and uſe a wrong or defective ſeed knowingly, is folly indeed! Large ſeeds may have the doubtful picked out.

The *largeſt* ſeed of the kind, plump and ſound, is to be choſen, being well ripened and kept from injuries

of weather and infects: for, as the largeſt animals produce the moſt profitable ſtock, ſo it is in vegetables; which directs the gardener always to ſave ſeed only from the forwardeſt and handſomeſt uninjured plants. As in animals the young may be ſtunted by bad management, and defective food, ſo in vegetables, the ſeed being good will not be alone ſufficient, if the ſoil and culture be not right.

Commonly ſpeaking *new* ſeed is to be preferred to old, as growing the more luxuriantly, and coming up the ſurer and quicker. This circumſtance induces ſome private perſons to ſave their own ſeed that they may not be *deceived* in buying old for new ſeed; a trick of trade, it is to be hoped, not practiſed by *every* ſeedſman: Yet a little mixture of *old* ſeed is ſometimes proper, becauſe the new is perhaps cut off, and the old ſaved, by being a day or two later in coming up.

If *old* ſeed is knowingly ſown, ſome allowance in point of time muſt be made. *Peas* and *beans* of two years old, are by ſome preferred to new, as not running ſo much to ſtraw. See *cucumbers* and *melons*, ſection 14.

As to the *age* of ſeeds, at which they *may* be ſown and germinate, it is uncertain, and depends very much *how* they are preſerved. Seeds kept from the air and moiſture by being buried deep in the ground will continue a great many years without corruption. *Peas* and *beans* will germinate very well at ſeven years of age; but the ſeeds of *lettuces* and *kidney* beans, and ſome others, are not to be depended upon after a year or two; and though generally ſpeaking the ſmaller ſeeds are of the leaſt duration, yet their maintenance of vegetative power depends much upon the *texture* of the ſeed, with reſpect to its coat, and the oil it contains, &c.

The *ſaving* ſeed by private gardeners, is hardly to be recommended. Things running to ſeed give a garden a *rude* appearance, often occupying ground that is wanted, and might be uſed to better purpoſe; and the caſe often is,

is, that feeding plants (in private gardens) are *neglected* in ſome meaſure, or deſtroyed by birds, and come to little at laſt. Perhaps they are not ſaved from *proper* plants. It is a particular buſineſs to raiſe ſeeds for ſale, and (generally) they are beſt had from thoſe whoſe province it is to deal in them: beſides, conſider farther,

Againſt our *own* ſeed, there is this to be obſerved, that it is a received *maxim* to procure ſeeds of eſculents from a different ſoil and ſituation, or at leaſt to *change* them, as being apt to alter or degenerate, if repeatedly ſown in the ſame place. It is proper, however, for private perſons to ſave ſeed *ſometimes*, in order to ſecure that of any *particular* ſort, that it is judged may not be got ſo true and good. Yet here perhaps the buſy *bee* or *wind* may interfere, and diſappoint expectation; for if there is any thing of the like kind in a neighbouring garden, theſe inſtruments may carry the *Farina* of that to our charge, and contaminate it, ſo as to produce a ſpurious offſpring, which is very frequently experienced in the *cabbage* tribe. Now this cannot in a *great* degree happen with thoſe who raiſe ſeed in extenſive pieces of ground occupied with the *ſame* ſort of vegetable.

Seed of *vegetables* ſhould be ſaved from fine forward plants, ſecured from rocking about, when they get tall; guard them againſt birds, gather them regularly as they ripen, leſt they ſhed and are loſt, and keep them dry. *Flowers*, it may be proper to ſave the ſeed of, and it is little trouble. The ſorts may thus be better depended on, and the ſmall quantity wanted of each kind makes it hardly worth while to buy, if we can raiſe them ourſelves, or get them of a friend; no ſingle flowers ſhould be ſuffered to grow in a garden where there are double ones to bear ſeed, as *larkſpurs*, and *holyhocks*, for the *Farina* of the ſingles tranſported by *bee* or *wind* will ſpoil the ſeed of the doubles. Such ſingle flowers ſhould be taken up as ſoon as ever diſcovered to be ſo. It ſhould be a rule for *flower ſeeds*

in general to be freſh from year to year; though if kept dry, and from much air, many ſorts will grow that are older: curious flower ſeeds are kept well in vials: others may be in ſmall drawers, and ſome hung up, or kept on ſhelves in their pods.

Seeds may be *forwarded* for ſowing by various ways of procuring a germination before they are put into the ground. In *ſummer* it has not been unuſual to *ſteep* both *broad* and *kidney beans* in ſoft water, or milk and water, about twenty-four hours, to forward their growth, and to aſcertain their vitality. If the ground is *very* dry when theſe ſeeds are committed to it, either ſteeped, or not, it is a good way to make drills or trenches to plant them in, watering them well firſt, and then preſſing the ſeed in a little. Any ſort of the *broad beans*, or even *peas*, may be forwarded, when ground is not for the preſent ready, by laying them in damp mould, in a garden pot, or otherwiſe, a layer of earth, and a layer of ſeeds, &c. and they may be put into drills or trenches (with care) when the radicle has got ſome length, the mould being light, and the work finiſhed by a gentle watering.

The ſmaller ſeeds, as *carrots*, &c. may be prepared for ſowing, by ſimply mixing them in a little moiſt ſand, or fine earth, taking care that they do not lie longer than the uſual time of their beginning to ſprout: but this practice need only be adopted for ſeeds that are long in coming up, and then there is ſome advantage in having them to ſow in a ſtate ready to ſtrike immediately, on freſh dug earth.

The *ſeaſon* for committing ſeeds to the ground, ſhould be as *early* as the nature of the plant to be cultivated will bear; for the forward productions which come without forcing, are the beſt as to ſize, flavour, and fruitfulneſs, if they meet with no material check from weather. It is the proper *ambition* of gardeners alſo, to have ſome of the *firſt* of each kind of vegetables and fruits, and thus to vie with others.

Let

Let this direction for *early* ſowing be underſtood, not only of *ſpring*, but *autumn* crops; that the plants deſigned for winter uſe, or to ſtand for ſpring, may be ſtrong, and well eſtabliſhed in the ground: Though for thoſe deſigned for *ſpring*, it is adviſable to have two or three different ſowings; for *lettuces* (as an inſtance) that are forward, will ſometimes fail when backward plants ſhall do well.

To be *ſure* of a crop, and in ſome things a *ſucceſſion* of crops, various ſowings ſhould be made through the year, at all times that are not too unnatural as to ſeaſon; for it is an object in gardening, not only to have early and late productions, but never to be without what *may* be produced. Every ſowing that is made (the early ones in particular) ſhould be *noticed* in time, whether it is likely to ſucceed, that the work may be repeated. But a little *caution* is neceſſary, that this buſineſs be not *over* done; for though there may *ſeem* to be a ſufficient diſtance of time in ſowing for *ſucceſſion* crops; yet they tread ſometimes upon the heels of one another ſo *faſt* as to occaſion a diſagreeable ſuperfluity: This is often the caſe in *peas* and *beans*, in the height of ſummer, and eſpecially if a hot ſeaſon: this caution is the more neceſſary, where there is no ground to ſpare, or but few hands to cultivate it. Labour with diſcretion.

Sowings ſhould be generally performed on *freſh* dug or ſtirred ground. The digging ſhould therefore be done as near the time deſigned to *ſow* as can be. There is a *nutricious* moiſture in freſh turned up ſoil, that ſoftens the ſeed to ſwell and germinate quickly, and nouriſhes it with proper aliment to proceed in its growth with vigour, but which is evaporated ſoon after from the ſurface. If the ground, indeed, turns up *raw*, or wet (as early in the ſpring it is apt to do) a little time muſt be allowed it to dry, and ſo alſo if rain falls firſt. In this caſe, ſeed ſhould be ſown as ſoon as ever the ground may be trampled on not to *hang* to the

the feet, for when the ſoil is too wet, it binds and does harm, eſpecially heavy ground; thus in this work, and every other in the way of gardening, there is a *nicety* of time to be obſerved, by thoſe who would do their buſineſs well. It is to be obſerved, however, that ſowing in *drills* or on *beds* that are not to be trampled, the moiſture of the ground is rather an advantage, provided, in the laſt caſe, that the ground will admit a rake, and the ſoil is not *too* wet to drop ſomewhat looſely about the ſeeds.

The proper *depth* at which ſeed ſhould be ſown, is to be carefully obſerved: if *too* deep, they will either rot, or not vegetate, or thrive well; and if too ſhallow, they are liable to be injuriouſly affected by froſt, wind, drought, or birds; but of the two, rather too ſhallow, than too deep, is beſt, and this we are taught by *nature* whoſe ſowings are moſtly ſuperficial.

The ſmaller the ſeed, the finer ſhould the ſoil be, and the leſs alſo the covering; ſo that, while ſome, (as the ſeed of *celery* is to be but barely covered, others as *peas* and *beans*) may have a depth of two, three, or four inches. But ſome regard is to be had to the *ſeaſon* and *ſoil;*—in a warm ſeaſon, and light ſoil, ſow deeper, and the contrary ſhallower.

The *quantity* of ſeed ſown, is a thing to be attended to with ſome exactneſs. Small ſeeds go a great way, and require a careful hand to diſtribute them; for though ſowing a little too much be a trifle as to the value of ſeeds, yet to have them come up *crowding* thick is an evil. To ſow *evenly* as to quantity, is an object of practice worthy of care, as it ſecures a better crop, and more eaſily managed in the thinning. If the ſeed is ſuſpected, ſow thicker; poor land will require more ſeed than rich.

It is not generally adviſable to ſow *ſeveral* ſorts of ſeed on the *ſame* ſpot, as ſome perſons are accuſtomed to do. The gardeners about *London* follow the practice; as profit is their great object, and not neatneſs or propriety.

priety. On the ſame piece, they ſow *radiſhes*, *lettuces*, and *carrots*; the radiſhes are drawn young for the table, the lettuces to plant out, and a ſufficient crop of carrots is left, for carrots ſhould not be very near to grow big: this is as reaſonable a combination as any that is made; but ſtill, if not ſhort of ground, each kind ſeparate will be found beſt. In defence of this mode of culture, it is ſaid, if one crop fails, the others may do, and there is no loſs of ground or time; and if all ſucceed they do very well. *Radiſhes* and *ſpinach* are commonly ſown together by the common gardeners, and many *manœuvres* of inter-cropping are made by them, as ſowing, or planting, between rows of vegetables that are wide aſunder, or preſently to come off, or in the alleys of things cultivated on beds. But this crowding mode of gardening will not be imitated by private families, except there is a want of room to bring in a proper ſucceſſion of crops. Some little things of this ſort, however, may well be done; as, a piece of ground new planted with *horſe-radiſh* may be top-cropped with radiſhes or ſpinach, &c. A thin crop of *onions* upon new aſparagus beds, may alſo take place, drawing them while young from about the plants.

The proper *covering* for ſeeds at broad caſt being determined on, as to depth, let the ground lay the rougher, the deeper the ſeed is to be buried; and if it is to be ſcarcely covered, rake the ground firſt very level and fine. All ſeeds come up beſt when moderately preſſed with the earth; for if they lie too lightly in contact with it, cold and drought more eaſily affect them, and when once ſeeds begin to germinate, they are impatient of both. To trample ſeeds in is on the whole better than any other preſſure. According to the *depth* it is intended to cover ſeeds, the feet ſhould be ſet wider or nearer, i. e. the cloſer for the leſs covering. Begin to trample on the outſide, walking regularly, lightly, and ſteadily round the piece, till the middle be arrived at in the finiſh. This done, lay all immediately

immediately and neatly level with a wide rake, drawing off ſtones, &c. but do it lightly, to avoid driving in the teeth of the rake, which would remove the ſeed, and make it come up irregularly.

Patches, or ſmall pieces, are ſometimes ſown without trampling, particularly of *flowers*, by drawing ſome of the mould on one ſide, and then ſowing and covering the proper depth with what earth was drawn off, adding a little more, if neceſſary. In this caſe, if the ſoil is not heavy and wet, preſs the ſurface with the rake head, ſpade, or otherwiſe. Seeds ſown in *drills*, or *rows*, are ſeldom preſſed, but they ſhould be, eſpecially if the ſoil be light; and even beans ſet by a *dibble*, are beſt to have the earth preſſed about them with it, or afterwards with the rake head, and they will ſupport themſelves more erectly, for the leaſt wind rocks them about when in looſe holes, and hurts the crop: In a light ſoil, the beſt way is to lay them in a trench, and trample firmly in.

Directions for *thinning* ſeedling crops, and pricking them out in time, were given in the laſt ſection. Let this buſineſs be done properly, and prick out enow, that there may be ſome to ſpare; perhaps a neighbour may be obliged thereby, and at any rate it is beſt to have plenty leſt accidents happen.

Propagation by *ſuckers* is a mode of culture rather peculiar to *trees* and *ſhrubs*. The things to be obſerved in this buſineſs are, to take them up with ſome care from the mother plant, ſo as not to injure its root, nor the ſucker's own root, by pulling it up without properly looſening it firſt. The earth ſhould be moved aſide by a trowel, and then the ſucker cut off by a *knife*, and not with a *ſpade*, as is common. Of thoſe hardy things that there is plenty of, this rough way does not ſignify much, as to the ſucker, but it may injure the root too much that it comes from. Wherever a root appears barked, the part below ſhould be cut off. If it is deſired to ſucceed well, in propagating by

by ſuckers, conſider that all young roots are tender, let them be trimmed to form, and planted immediately, or at leaſt let them be covered with earth or laid by the heels, as it is called. Suckers with poor roots, muſt have their heads reduced the more.

Propagation by *ſlips* is of two ſorts, either from the *root*, or *ſtem*; and ſeveral ſorts of *flowers* and *herbs* are increaſed this way. When from the *roots* (if the whole is not taken up) move the earth carefully aſide, and ſlip off by a preſſure of the thumb and finger, and be cautious of hurting the fibres of the ſlips, planting with fine and good mould about them. Take off ſlips from the *ſtem* carefully by a puſh of the thumb, and not too many from the ſame plant, as it is apt to injure the place by tearing off ſome of the wood. *Slips* from the ſtem are to be conſidered as *cuttings*, and treated accordingly. They take more certainly, and make better roots than cuttings.

Offset is a term ſometimes applied to *ſlips* from fibrous roots; but more properly ſo from *bulbous* roots, which put forth many offsets. Theſe are ſlipped away at the time they are taken up for removal or replanting, and commonly take two or three years before they bear flowers: diſpoſe of them therefore in a *nurſery*, where they may remain undiſturbed while they come to a flowering ſtate; keep them however clean from weeds, and ſtir the ground a little.

Diviſion of the roots is a way of propagating many ſorts of plants. To this end (of courſe) they muſt be taken up, and then either carefully pulled, or cut aſunder with a ſharp inſtrument; as the caſe may require. It is not ſafe, however, to divide ſuch roots into very ſmall pieces, (eſpecially if cut), as then they are apt to die; but leave them of a ſize ſufficient, not barely to ſecure life, but to form immediately a handſome head. The general ſeaſon for thus *ſplitting* fibrous rooted plants, is *October*, but it may be done early in the ſpring, as *February*.

Cuttings

Cuttings of a variety of woody plants will grow, and many trees and ſhrubs are propagated this way; but their ſap muſt be of a watery nature, as thoſe plants that are gummy will not ſtrike, (or rarely) though ever ſo much care is beſtowed, or time allowed them. The texture of the wood of cuttings muſt be ſomewhat ſoft, as head wooded ones will not grow. Cuttings ſhould be rather ſhort than long, and kept *ſteady* in the ground. If they are planted where there is any likelihood of their being diſturbed, they may be tied to a ſtick, well faſtened in the earth.

The *ſeaſon* for ſetting *ſlips* and *cuttings* is for ſome things ſummer, as *wall-flowers* and *myrtles*; and for moſt, from *October* to *March*, but (in general) the ſooner the better. It has however been ſaid, that *ſpring* is the beſt time for *all*, and that the ſap ſhould be in motion firſt. This is at leaſt true of ſome things, as cuttings of the *vitex*, or *chaſte tree*, (though hardy) are found to do beſt in ſpring; and all cuttings from plants of a delicate nature do ſo.

Cuttings ſhould be of well ripened wood, and have the earth preſſed to them, the whole length that they are in the ground; i. e. from four to ſix inches. Cut them with a ſharp knife ſlopewiſe, and plant in a good ſoil, and in a ſituation where they only have the morning ſun; and keep them cool (not wet) by occaſional watering in dry weather.

Laying of branches is a mode of propagation, that may be adopted for almoſt all foreſt trees, and ſeveral ſorts of fruit trees and ſhrubs; i. e. all that will grow from cuttings, and many that will not. *Layers* are leſs rampant, and more fruitful than ſuckers; and "thoſe who are curious, and find a ſeminal variety of any tree, or ſhrub, that is remarkably different from the original, the only way to have it preſerved genuine is to convert it into a *ſtool*, (by cutting down) and raiſing plants by *layers*." They are made of the lower branches of the plant, and muſt be young and pliable,

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to bend down without breaking, to the depth of four, five or six inches in the ground, (as the soil is light or heavy) at which they must be held securely by good pegs; and if they cannot be brought down sufficiently deep, some earth may be raised up to them.

Let the ground about layers be kept *cool* by occasional waterings, and laying some *moss*, *turf*, *litter*, or rather small *pebbles* about them, which will not harbour insects. The part out of ground may be supported erectly by a tie to a stick. It is a good way to *slit* (with a sharp knife) the part at the peg, as in *carnation layers*, a little more than an inch; and some *prick* a few holes about the part (at a joint) with a blunt awl, to help the layer to strike root. For the *harder* woods, some gardeners make several slits, or chips, in the part layered in the earth, and bind the layer rather tight, just above it, with pliant wire; and *soft* wooded layers are sometimes twisted to crack the bark, in order to help the part to strike quickly. Generally layers should be shortened to six or eight inches above the ground; or do it to two eyes, be it more or less above ground.

Where there are no branches low enough to be brought into the ground, (and it is not thought good to head down for the production of low shoots, or suckers) plants may be layered by fixing a broken *pot*, or a *box*, with a slit in the side, to the height necessary to lay in a branch. A branch also, if long enough, may be thrust through the hole of a garden pot upwards, then filled with earth, and supported by some contrivance, and shaded by some means, and in both cases water frequently. Take care not to injure the buds in drawing through the hole of the pot. By this contrivance rooted plants being procured in *pots*, may be turned out with the earth about their roots undisturbed. A branch of a *vine* thus layered in *November*, may be next year cut off, when the *fruit* is ripe, brought in the pot to *table*, and afterwards planted out.

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The *ſeaſon* for layers is (generally) the ſame as for cuttings, and ſome ſorts will be well rooted in a year, but others will require two, and ſometimes three years before they will be fit to be moved. Thoſe, however, that are *ſlow* to ſtrike ſhould be layered as ſoon as ever young ſhoots are forward enough, which may be in *July* or *Auguſt*. This practice is particularly recommended for the *phyllerea* and *alaternus*. *Cut* off the leaves of the part that goes into the ground, becauſe ſuch young wood will not well bear ſtripping. For propagation of fruit trees by *graffing*, ſee the two next ſections.

SECTION VI.

OF A NURSERY.

THERE are ſo many reſpectable *nurſery-men* ready to ſupply our wants, that the *neceſſity* of a nurſery is in a great meaſure done away; it affords, however, employment, amuſement, and an opportunity for exerciſing ingenuity, and that particularly in the way of *graffing*.

By means of a *nurſery*, trees are ready upon the *ſpot*, to be tranſplanted without damage to the roots from being long out of the ground, and the climate and ſoil being the *ſame* in which they are raiſed and are to grow,

grow, and to fruit, there is a ſort of certainty of ſucceſs, that could not otherwiſe be had. There is alſo a great advantage in raiſing trees, in a very *material* point, in an aſſurance of having fruit that we *know* we like, by getting graffs, or buds, from trees of which we have taſted and admired the fruit.

In a nurſery, *ſtocks* may be raiſed for fruit trees, *ſhrubs* propagated by *ſuckers*, *ſlips* and *cuttings*, and *flowers* of the biennial and perennial ſorts may be ſown, bulbous offsets planted, and thus a *ſtock* may be readily provided for furniſhing any part of the pleaſure ground. For all, or ſome of theſe objects, a ſpot might be allotted, if it were only the cool corner of a large garden, having a good ſoil.

Suppoſing even only a *little* ſpot is made uſe of for a few *flowers*, *ſhrubs*, &c. let them be duly attended, to *weed*, *thin*, *water*, *trim* into form, *ſupport*, *ſhelter*, and in ſhort *nurſe*, but yet not to bring any thing up tenderly, as too much, or long cover in winter, expoſes to riſk when it is taken away; the plants not being able to bear then even a moderately cold air. A low part of the garden, that has not too much ſun, is beſt for a nurſery; if not overſhaded with trees.

Suckers, *ſlips* and *cuttings* of any kind, ſhould be attended to for forming a proper *head;* ſhortening the ſhoots, and keeping a clear ſtem below, and the roots free from ſuckers. Two years commonly fit *ſuckers* for planting out, and three years *ſlips* and *cuttings*. But remember to faſten the two latter, if not the former, to ſticks, that the wind, &c. may not looſen them, and prevent their rooting.

Large plants, as young *trees*, &c. ſhould be tied to ſtakes well fixed, at firſt putting out for the ſame reaſon. Theſe ſhould be ſeen to from time to time, that they remain faſt; as alſo, the mats or cloths, that may have been put over hoops to ſhelter exotic ſeedlings, &c. from heavy rains, or ſevere froſts, for the wind has great power over ſuch coverings.

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The *ſoil* of a nurſery ſhould be dry, free and in heart; but not *much* enriched with dung, leſt a rankneſs of food give too great a freedom of growth, and a *habit* in the plants, which not being indulged by a like ſoil afterwards, diſappointments enſue. A *dungy* ſoil alſo encourages worms and inſects, to the injury of ſeedlings, and makes young plants more liable to be cut off in a ſharp winter; too rank a ſoil, alſo, prevents the juices of plants from being properly digeſted, and ſo they are leſs fruitful.

On ground deſigned to be ſown, or planted in ſpring, if it needs refreſhing, lay on a little well conſumed dung towards winter. See page 46.

A *nurſery* ſhould be laid out into *beds* of about four feet wide, with *alleys* of about two; and thus all the work of it will be done conveniently, and the plants will have free air to ſtrengthen them. In the alleys may be buried ſome dung, which will be at hand, and uſeful, when *conſumed* by time and turning over, to dreſs the beds as they may need it.

Stocks for graffing *fruit*, are raiſed from *ſuckers* of plumbs, cherries, codlins, crabs, pears and quinces; and ſometimes from *cuttings* of codlins and quinces; but thoſe ſtocks raiſed from *ſeeds* and *ſtones* are much beſt if we conſult freedom of growth. If *ſucker* ſtocks grow ever ſo well, they are apt to put forth ſuckers, which is not only a troubleſome circumſtance, but exhauſts a tree, and prevents fruitfulneſs. It is to be underſtood, that the *graff* will (in ſome meaſure) partake of the nature of the *ſtock*; therefore ſoft, mealy fruit, ought to be propagated on auſtere ſtocks, and the contrary; tender, delicious fruits deſigned for *forcing*, ſhould always be on ſmart flavoured ſtocks, or they become inſipid.

Though *crab ſtocks* for apples are moſtly uſed, yet the ripe black ſeeds of any other *ſmart* eating apple may be ſown, either in autumn or ſpring. Sow in autumn, (*October* or *November*), and if this ſowing fails, the

the ſpring may be adopted towards the end of *February*. At theſe times, the *well* ripened ſeeds of pears, or ſtones of plums, or cherries, may be ſown. The ſtones of any ſort of plum, (damſons excepted) produce ſtocks for *apricots*, *peaches* and *nectarines*; and though the *white* ſorts are commonly preferred, the *red wheat-plumb* is excellent for the *apricot*; of *black* plums the *muſcle* is the beſt.

Thoſe *ſeeds* or *ſtones* that are ſaved early, or are to be kept through the winter for ſpring ſowing, (which many prefer), ſhould be preſerved from air in dry ſand: Let them be put in a box layer upon layer, three or four courſes, covering the top three inches, and guard againſt mice. Nuts, acorns and cheſnuts are put in the ground at the ſame time, as alſo the ſeeds of various ſorts of *ſhrubs* and *foreſt trees*. The tenderer ſorts of ſhrubs and trees are indeed beſt ſown in *March*, or beginning of *April*; and a gentle hot-bed would be of advantage, to bring up the ſeeds with certainty.

The *ſeeds*, or kernels of apples and pears may be ſown in *drills* a full inch deep, a foot aſunder, and ſcattered thinly in them, preſſing the ground a little to them; or ſow at *broad caſt*. But take care not to uſe the ſeeds of fruit that has grown on a *hollow* tree, for they will not vegetate.

The *ſtones* of any fruit ſhould be ſown at near two inches depth; and *nuts*, &c. at three or four. Stones and nuts muſt be ſet thin, and rather (as of ſome advantage) the ſmall end upwards, for here the ſhoot puſhes out, or they may be laid flat. If the beds are ſown all over, cover the ſeed with mould previouſly drawn aſide in the alleys; but drills have the neateſt appearance, and ſome *little* uſe may be made of the ſpaces between them the firſt year.

Prepare the *beds* by digging the ſoils well to a full foot in depth, and let the ſurface be made fine: thus will the roots ſtrike down freely to preſerve themſelves from

from drought, wet will drain away, and the young plants puſh ſtraight upward: four feet beds are beſt.

The *enemies* of ſeed beds muſt be guarded againſt, as *poultry*, *birds*, *dogs*, *cats*, *mice* and *froſt*; the latter by covering lightly with pea haulm or wheat ſtraw, and the former by furze, thorns, or bruſh wood, and traps. If any *hares*, or *rabbits*, get at a nurſery, they make ſad havock in ſharp weather, by barking the young plants; therefore, guard againſt them, and larger animals, by good cloſe fences, which will alſo keep out ſharp winds.

During the *firſt* year, they ſhould be kept moderately cool, by *watering* in dry ſeaſons, or laying *moſs*, or ſome ſhort litter, over the beds. And as to *weeding*, though they muſt not be ſmothered, yet ſome *ſmall* weeds may be ſuffered to grow in ſummer, as they help to ſhade the plants, and keep the ground cool. Seedling trees are very apt to ſuffer by drought. *Thin* them in the ſummer, after rain, from two inches to three or four aſunder, according to their nature; and at the end of the year (i. e. when a year old) thin to from nine inches to a foot aſunder: thoſe drawn may be planted out at the ſame diſtance, or at leaſt the beſt of them; and thoſe left ſhould be re-planted the ſecond year, leſt the roots ſtrike too much downwards. The firſt *winter*, they ought to be protected from ſevere froſts, by ſome light dry litter, which remove in mild weather. At all times, except winter, if the roots of young plants are diſturbed by any means (as pulling up ſtrong weeds, hoeing, &c.) ſettle the mould about them by a good watering.

Stocks deſigned to grow for *full* ſtandards, ſhould be ſet in rows, three or four feet aſunder, and at one foot and a half in the rows; or if ſet at the before-mentioned diſtances, they may be tranſplanted again, another year or two, wider. Rows for dwarfs need not be ſo far aſunder as thoſe for ſtandards: but before they are planted, the ſide ſhoots muſt be trimmed off,

and

and the *tap* roots ſhortened, in order to procure a clean ſtrait ſtem, and a full root.

Protect from *froſt* all new planted trees, by laying peaſe, bean, or ſtrong wheat ſtraw between them; which may be ſecured by trampling or laying ſtones over it, or by pegging down. Seedlings, or ſtocks, planted out in *ſpring*, ſhould be protected from drought alſo in the ſame manner, a month or two, (or longer,) and afterwards occaſionally watered in dry weather.

The *ſecond* year, in *October*, thoſe left at a foot diſtance in the rows, may either be taken up and re-planted, cutting the *tap* to make buſhy roots, or, taking out every other, left to grow of a ſize fit to *graff*, or *inoculate* there. This year, only the ſtronger ſide-ſhoots from the ſtem ſhould be cut off; for the weaker ones will help the ſtem to thicken, by detaining the riſing ſap, and imbibing moiſture from the atmoſphere to feed it; and the getting a ſtrong ſtem is a material thing, eſpecially for ſtandard trees. Do not top the leading ſhoot.

Stocks of any kind will be three or four years growing, or two or three from planting out, before they are fit for graffing; and if ſtrong ſtocks are wanted, (as for ſtandards,) more time will be neceſſary: The rule of ſubſtance may be from a quarter, to an inch, or more diameter. As *dwarf* trees are graffed, or inoculated within five or ſix inches of the ground, much leſs ſtocks will do for them, than for *ſtandard* trees, which are graffed at ſo many feet high; i. e. if for full-ſized trees.

Stocks that are naturally of a ſlow growth, are coveted for dwarf trees, that they may not mount the wall, fill the eſpalier, or increaſe to a large head too faſt. So for *apples*, inſtead of *crab* ſtocks, which are commonly of free growth, thoſe raiſed from the ſeeds of the *paradiſe* apple are recommended as growing dwarf. Or ſtocks may be raiſed from cuttings of the *Kentiſh Codlin*.

In default of these naturally dwarf-growing stocks, those raised from *suckers* are sometimes used, as less likely to grow off freely than seedling stocks. *Layers* also are proper for dwarf stocks, and they are commonly to be had from the *codlin*; all layers must be carefully taken up to preserve the roots.

For *pears*, dwarf stocks are raised from *quince* cuttings, layers, or suckers; but as quince shoots are commonly of a weak and crooked growth, the stocks from *pear seeds* are mostly used. But *suckers* may be obtained from *pears*, *quinces*, &c. by cutting down an old tree within a foot of the ground, and these being planted out for a year or two, become good stocks. If the suckers, or shoots, lay high, they may be earthed up to induce them to strike. But *suckers* will be often forced, by only cutting off the *top* of an old tree, which is an experiment to be recommended, (in *pears* particularly) as there will be formed a *new* head, and an opportunity given to *graff* for another, or a better sort. And if there are no suckers, there may be low-placed shoots proper for *layers*, of those trees that will thus strike, and most trees will, if not the first, perhaps the second year.

Stocks from *suckers*, for dwarf *plums* and *cherries*, are in *one* sense better than those raised from stones, as being less free in their growth: and the *common red cherry* and the *black* are to be preferred for stocks, whether as to suckers or seedlings. If suckers of any tree grow at a proper *distance* from the parent stock, they may be grafted or inoculated without removal, till wanted to plant out for fruiting, i. e. in a year or two. Suckers that are for stocks, should always be planted out in autumn, and stand (at least) to the following spring or summer, twelvemonths before they are used. *Apricots*, *peaches* and *nectarines* are grafted by inoculation on plum stocks, but rather on those raised from stones, except for *apricots* it hardly signifies. Stocks of the *wheat plum*, or the *muscle* are the best. *Figs*, *quinces*, and

and *mulberries* (as ſometimes *codlins*) are raiſed from *ſuckers*, *layers*, and *cuttings*, without graffing; but from layers is the beſt method, being more ſure than cuttings, and more fruitful than ſuckers, and in one year they will be rooted. The ſeaſon for both cuttings and layers (a little before or after) is *October*, though *February* is rather better for the *fig*. The layers from *fig trees* muſt not be taken off till the beginning of *March*, as when planted in *autumn* are apt to die; let other layers, however, be then removed.

Medlars are *graffed* on pear or crab, or ſervice-tree ſtocks; but more commonly upon medlar and white thorn ſtocks; though the fruit (on the laſt at leaſt) is not reckoned ſo good.

Grape vines are generally raiſed from *cuttings* and *layers*, (ſometimes from *buds*) either in autumn or ſpring; but for cuttings rather the latter; and if the vines are pruned in *February*, or before, lay the cuttings by in dry mould or ſand, till *March* or *April*. Place the *layers* in the ground, about four or five inches deep, leaving two or three eyes out. The *cuttings* ſhould have three in the ground, and only one or two out, or be about a foot or fifteen inches long, and placed a little aſlant: chuſe the moſt ſhort jointed. *Cuttings* ſhould have a knot of the *old* wood at bottom, for thoſe cut off above, though they may ſtrike, will not produce ſo good, or fruitful plants; they are alſo beſt taken from the lower part of the tree, the wood there being the moſt ripened. Vines are *beſt* raiſed where they are to grow, by opening a hole, and placing two cuttings in, one of which is likely to anſwer. Keep it to one ſhoot, and cut down to two eyes in autumn. Keep to two ſhoots the next ſummer, and prune down to two or three eyes in autumn, and then the vine will proceed with vigour, and bear well.

Cheſnuts are raiſed by ſowing thoſe that are *imported*, three inches deep, and four aſunder, in rows ſix inches apart; where growing two years, let them be planted

out half a yard apart, in rows a yard aſunder. When five or ſix feet high, they may be moved where they are to remain: If the *ſeed* is good, it will ſink in water.

Walnuts are raiſed from well-ripened nuts, ſown either in autumn or ſpring; and if the latter (which may be rather beſt) preſerve the nuts in their outer coats, in dry ſand. Theſe trees are beſt but once moved, and their tap root preſerved, if for *timber*, with the head as entire as poſſible; but if for *fruit*, the tap root ſhould be ſhortened, to prevent the tree mounting, and the head may be cut, to accommodate it to the root, as to ſize. The walnut likes a dry ſoil, and if gravelly, it does beſt; and though walnut trees are many years before they come to bear, yet if it were only for the *wood*, poſterity would have reaſon to commend the planter of them.

Filberds are raiſed from nuts, or ſuckers, and layers, the latter of which is the beſt method; or they may be graffed on the common nut tree. The nuts ſown in *autumn*, or kept dry in ſand till *February*, produce fine trees, but generally *differ* a little from the ſorts ſown, and make a variety generally for the worſe. Nuts fruit beſt in a cool ſoil.

Currants and *gooſeberries* are raiſed principally from *ſuckers*, *ſlips* and *cuttings*, but beſt from the latter. When from *ſeed*, it is with a view of obtaining varieties, and hence the many ſorts of *gooſeberries* in ſome catalogues. Uſe *cuttings*, or *ſlips*, of the laſt year's wood, from fruitful trees, about nine or ten inches long, and ſet them four or five in the ground, half a yard aſunder; train them to one ſhoot, (or at the moſt two,) the firſt year, and the next head them down to ſix or ſeven eyes, when a fine head will be formed the following year, and in the *autumn* they may be moved where they are to fruit.

Barberries are raiſed from *ſuckers*, *layers*, *cuttings*, or *ſeed* ſown in *autumn* or *ſpring*. The latter mode of propagation produces the fineſt ſhrubs, with the largeſt fruit,

fruit, though it is ſeldom practiſed, ſuckers being generally plenty.

Raſpberries are almoſt univerſally propagated from *ſuckers*, being always abundant; and as this ſaves a year, and *ſeed* produces varieties not deſirable, ſowing is not to be recommended: This ſhrub is rarely brought into the nurſery to obtain ſtrength.

Strawberries are raiſed from *ſeed*, *offsets*, and *runners*, but almoſt univerſally from the laſt; plants from *ſeed* produce the fineſt fruit, and ſometimes a variety that is ſuperior to the original. It ſhould be ſown in pots, or boxes in *March*, or *April*. This method is particularly to be recommended for the *alpine*, chuſing the largeſt and moſt conical fruit for ſeed.

The young *offsets* of the preſent year, ſlipped in *autumn*, or thoſe of the laſt year (which will be better rooted) ſlipped in *ſpring*, will do for plants, cutting off the ſticky parts; but the firſt *runners* are more commonly and properly uſed; and to have theſe fine, the runners beyond ſhould be pinched off in time. *Offsets*, early in ſpring, and forward *runners* in ſummer, (as ſoon as rooted in *June*,) may be planted out in cool ground, at ſix inches diſtance, by way of a nurſery, in order for making new plantations towards the end of *September*, or in *October*. This is thought a good way by many, but it is ſeldom practiſed: Let the ſummer plants be well watered till rooted, and ſuffer no runners to proceed from them. The *common* method is to let the runners remain till *September*, and then, as early in the month as may be, to dreſs the beds, and ſelect the ſtrong and moſt buſhy-rooted ſets for forming new beds: It would, however, be an advantage both to the old ſtools, and the young plants, to ſuffer only the firſt or ſecond runners to remain for the purpoſe: Thus their own beds will be the *nurſery* for them; and except the ſoil is worn out (perhaps,) the beſt.

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The raiſing of FOREST TREES is rather beſide the purpoſe of this book. They have been mentioned as to the time of *ſowing*, and their treatment is in a great meaſure the ſame as for raiſing *ſtocks* for fruit trees; ſo that to thoſe who would do only a little in this way, much more need not be ſaid.

Foreſt trees are often left to grow thick on the ſeed bed, and only thinned a little in the autumn following, and ſo from time to time as they get bigger; but a little thinning ſhould take place in the ſummer, by *drawing*, when the ground is moiſt. If the ſoil that ſeedling trees are to be planted in be poor, let them be raiſed in earth ſomewhat ſandy, and at any rate not in a rich dunged ſoil.

When *young* men take to gardening and planting, it is an happy circumſtance, and they ſhould loſe no time in the buſineſs; for it is a thing that perſons advanced in years have often repented of. It produces conſiderable ſatisfaction, and a peculiar pleaſure in the evening of life, when a man can point at good trees, and ſay, "Theſe are of my own *planting!*"—but it were a ſuperior thing to add, "And of my own *raiſing* too." *Young* planters would wiſely reſolve, therefore, to raiſe their own trees, eſpecially of the *foreſt* kind. "There is no better, or cheaper way of raiſing woods and plantations, than by ſowing the maſts or nuts of timber trees, where they are always to *remain*, and this is beſt done in *ſpring*."

It is to be obſerved, that the wild *ſervice*, *hawthorn*, *holly*, and *aſh keys* come up the *ſecond* year; but moſt other ſeeds of trees the firſt. *Aſh keys*, however, (and probably the others,) if they are buried in a pit with coal aſhes ſifted fine, or in a ſandy earth for a year, will come up the firſt year they are ſown.

To have *good ſeed* of the various kinds, is a thing *too* little attended to; but on which evidently depends much. It ſhould be well-ripened, and the produce of fine healthy trees from the top, or outſide branches; withal,

withal, not growing near dottrel, ill-conditioned ones, the *farina* from the flowers of which might impregnate thoſe of the good tree, and give its ſeed a degree of degeneracy. Let *oak acorns* be thrown into water, and thoſe only uſed which ſink quickly;—they ſhould be kept a while to harden, but not too long out of ground, as they ſoon ſprout.

In the *management* of a nurſery, the young plants of trees and ſhrubs ſhould be *dug* round once a year, by a downright cut of a ſharp ſpade, a little diſtance from the ſtems, nearer or farther off according to their age, to ſhorten ſtraggling roots, and produce new ones more at home: Let this be done in *October* or *February*; the former time is beſt for the older plants, and the latter for young ones. The ſpade alſo may be drove under them to cut off the tap roots, where it is not an object to preſerve them. By this practice, a good, full, bruſhy root will be obtained, fitting plants for a proſperous removal; but it ſhould be done a year before tranſplanting: It improves alſo the ſoil. *Evergreens* in particular would be ſafer to move, being thus treated; and if only to be moved from one part of the grounds to another, balls of earth in this caſe will hold well to them. Immediately after the operation, a ſound watering will be proper to ſettle the earth to the roots, except the ground be quite moiſt; but this work of digging a nurſery is beſt done when the ground is dry.

SECTION VII.

OF GRAFFING.

GRAFFING, (or grafting,) is the inſertion of a *cion* into a *ſtock*, or *ſtem*, raiſed for the purpoſe, and is neceſſary to the enſuring of *good* fruit; i. e. to have

the *ſame* (or at leaſt with little difference) produced on the new tree, as that of the *old* one from whence the graff was taken: It is ſometimes performed on the *branches* of trees, and may be on the *roots*, a piece being raiſed out of the ground for the purpoſe.

If the *ſeeds* of fruit were left to grow up to trees *without* graffing, they would produce a *different* kind from that they came from; by chance a better, but moſt commonly a worſe. The *varieties* of fruit we have, were obtained partly from ſeedling ſtocks, without graffing, and partly by an accidental difference, that the ſtock, or ſoil, may have given.

Graffing is like planting upon a plant, for though there is a union of the parts, there is in fact little other communication than a root has with the ground. The cion, or bud, draws nouriſhment from the ſtock, but no other than is properly adapted to its own peculiar pores, which by a chemical proceſs (ſuppoſe by fermentation in its little bladders, or cells) it alters, ſo as to become excluſively its own. A great variety of *fruit* is produced by graff-planting from the ſame kind of ſtock, (and that perhaps a mere *crab,)* juſt as a great variety of plants are from the ſame ſoil: By this means alſo, ſome *foreſt*, and many *ornamental* trees and ſhrubs are propagated, and thus their particular varieties preſerved, as in all the variegated ſorts, &c.

The art of *graffing* is a very curious diſcovery, and though it requires ſome ingenuity to perform it, a few trials may make it familiar, and it will prove an agreeable ſource of amuſement and ſatisfaction. By being able to graff, young trees may be always at hand for replacing old, or unſucceſsful ones; and the pleaſure of obliging a friend from our ſtock in *this* way, is peculiarly gratifying.

Skill in this ingenious art is clearly beſt obtained by *ſeeing* the work performed; and at firſt trial, to have an *adept* at the elbow, would be a great advantage. There are few *gardeners*, (even by profeſſion,) however,

ever, that practice this work, owing to the great number of *nurſerymen* ready to ſupply trees. But though they raiſe fine trees, much diſappointment has often happened in dealing with them (particularly in the *ſort*) which might be avoided, by a man's being able to raiſe good trees for *himſelf*. Directions preciſely deſcriptive of the buſineſs of *graffing*, are therefore here attemped, and if once underſtood, trials ſhould be made without minding the diſcouragement of a few failures; for practice will make perfect.

Proper *ſtocks* being ready, and cions, or buds procured, there will be wanting a good ſharp narrow-bladed *pen-knife*, and a ſharp ſmooth-edged *pruning-knife*, with ſome well wrought *loam*, or *clay*, and ſome good new *baſs*, or ſtrong *yarn*. The clay ſhould be made up as morter, mixed with ſhort hair, or fine chopt hay, with a little horſe dung, and prepared a day or two before-hand; or longer the better, being beat up afreſh with a little water every day.

The firſt thing to be done is, to cut off the *head* of the *ſtock* at the proper height, and in a fair part of the bark, making a ſmooth flat top: If the ſtock is too ſtrong for the knife, and a *ſaw* is uſed, it muſt be ſmoothed with the knife after. The propereſt ſize for ſtocks, is from half an inch to an inch diameter, a little more or leſs, however, may do. When a ſtock is too little, the cion is apt to overgrow it, and when too big, the cion does not ſo well, or ſo ſoon, cover the ſtock, as might be wiſhed: yet ſtocks of *any* ſize can be uſed by one mode of graffing or other.

Dwarf trees are to be graffed within ſix inches of the ground, and *ſtandards* as high as the ſtock will well bear, conſidering whether they are to be half or full ſtandards; the former at about three or four feet, the latter at five or ſix. But trees deſigned for *ſtandards*, may be graffed, or inoculated at a lower height, the *graff* being trained to the deſired length, by keeping it to a ſingle ſtem.

The *cions* ſhould be *healthy* and *ſtrong*, (not however of a ſoft, ſappy, luxuriant growth,) and taken from the *outſides* of fruitful trees, where the juices of the wood have been properly digeſted by ſun and air: they ſhould be taken (if it may be) from trees juſt in their prime, or at *full* bearing, and not before. Let them be cut two or three weeks ſooner than wanted, and if kept longer they may not hurt, for they had better be cut a little too ſoon, than too late, at full length, without any ſide ſhoots.

Let the *cions* of *pears*, *plums*, and *cherries* be cut from the middle to the end of *January*, and at fartheſt not beyond the middle of *February;* the *ſeaſon* muſt, however, ſomewhat govern. Keep them all over in *dry* mould, cloſe under a ſouth wall, or ſome ſhelter, covering them with ſtraw in wet or ſevere weather. Some preſerve them in a cool room, where they will do without mould, but it would be better to ſet them up an end in a garden-pot, half their length, with mould, or ſand, nearly dry.

Cions cut *early* are prevented from getting too forward in *bud;* and if the buds begin to ſtart, and look white, they ſeldom take. By having them as long as they *may* be kept before uſed, the ſap of the ſtock gets in forwardneſs; for it muſt firſt begin to ſtir, and ſo be ready to puſh itſelf quickly into the *cion*, (now ſomewhat exhauſted,) to form a union with it.

The *middle* of cions is fitteſt for the purpoſe; but do not cut off the *tops* till they are brought out to graff, for they keep beſt in length. If *cions* are to be *tranſported* to any diſtance, let their ends be ſtuck two or three inches in clay, and ſo matted round in a bundle; or, if wrapped round with a fine hay rope, and ſmeared over with cow dung, clay, or a ſtrong earth, they will not ſoon wither.

Some *gardeners* ſay, cions ſhould be *only* of the *laſt* year's growth, and others, that the wood of the year before is beſt; but it is ſo far a matter of indifference, that

that they will take much older, though (perhaps) not ſo certainly. As a medium way, if a little of the former years wood be cut with a cion of the laſt, and this elder wood be uſed for the part graffed, it will be found to anſwer, in covering the ſtock ſooner; though it muſt be acknowledged, that all *new* wood is the common practice of thoſe who raiſe trees for ſale; which circumſtance is ordinarily a preſumptive proof of right. However, if wood of a year's growth is not *ſtrong* enough, then, at leaſt, ſome of the old wood ought to be cut with it: and the bigger the ſtock is, the more this practice commends itſelf, as the *barks* will be ſomewhat more equal in thickneſs.

Proceeding to *graff*, take off a little of the lower end of the cion firſt, and then cut it in length, ſo as to have three or four eyes to appear above the claying: two eyes will be ſufficient for a ſtandard, but four is better for a dwarf that is to be trained. In cutting cions into lengths, let the top eye be juſt in front, or juſt behind, but rather the former. Uſe not, (except upon neceſſity) the *upper* part of a cion, as the wood is too *raw* for the purpoſe, and will be ſhrivelled; yet ſtrong cions (properly inſerted) ſeldom miſs through drought: indeed they will take ſooner than if *quite* freſh cut and full of ſap.

The *time* for graffing is uſually from *Mid-February* to *Mid-March*; but in a forward ſeaſon ſooner, and in a backward one ſometimes later.

CLEFT-GRAFFING has been the moſt common method of propagation, and though it is not the neateſt, yet it is a certain and eaſy way to young practitioners. The ſtocks for this mode of graffing ſhould be ſtrong, about three quarters of an inch diameter, or more if it ſo happen; but it *may* be uſed with very young ſtocks, having cions of like thickneſs.

Cut off the *head*, as before directed, ſo as to have (on the ſunny ſide) a ſmooth part in the ſtock, where the cion is to be placed, and cutting a part of the ſtock

off ſlopewiſe, oppoſite to this place, leave the top, or the crown of the ſtock, about half an inch wide.

Then *cleave* the ſtock with a ſtrong knife, or thin ſharp chiſel, about two inches deep, as near the middle as poſſible, ſo as not to divide the *pith*, and if any roughneſs appears in the ſlit, ſmooth it off with a pen-knife; but ſomething of the *wedge* kind muſt be put into the ſlit to keep it open to receive the cion, leaving proper room to put it in. Cut the cion on each ſide to the form of a *wedge* at bottom, an inch or more long, making that ſide which is to be placed inwards in the ſtock, thinner by about one third. Put the cion in, ſo that its bark, and that of the *ſtock* be level; and if the bark of the ſtock be thick, let the bark of the cion ſink in a trifle, as the current of ſap that unites them, runs betwixt the bark and wood. The *cion* being placed, take the wedge out that kept the ſtock open; yet if the ſtock be ſo ſtrong as to *pinch* the cion *too* hard, eaſe it by a little bit of dry wood to be left in the cleft; ſo, however, as not to looſen the graff, which muſt be held firmly: or if the ſtock be very ſtrong, the wedge of the cion may be nearly of equal thickneſs, inſide and out, which eaſes the barked part.

The *graff* muſt be nicely *whipped* round with wet *baſs* pulled tight, and the whole *clayed* over to an inch above and half an inch below, ſmoothing it off taper, with a trowel, or knife, dipped in water. And as this is done with a view to keep out wet, ſun and air, if the clay falls off, or cracks, it muſt be immediately repaired, till the ſeaſon comes to take off the bandage, which is about *Midſummer*, or rather ſooner: yet at this time ſome clay ſhould be ſtill kept on the *top*, to ſecure the cleft from wet, and ſo continued till the cleft is grown up.

If it is deſired to put in *two* cions, to form a tree for the wall, or eſpalier, there ſhould be two clefts parallel to one another, one on each ſide the pith. Some put

put in two cions, merely in caſe one ſhould miſs; but it is not adviſeable. It need hardly be obſerved, that in this caſe the crown muſt be left whole.

With reſpect to the *time* of performing this work, remember that what has been ſaid relates to *pears*, *plums* and *cherries*: *apples* cannot be graffed till the beginning of *March*, or later, as the ſeaſon is, even into *April*, for the ſap muſt be on the move.

WHIP-GRAFFING has the advantage of cleft-graffing in neatneſs, and not requiring the ſtocks to be ſo old by a year or two, as very ſmall ones will do in this way; for the ſtock is directly covered by the cion, and it takes with certainty if properly performed. Cions ſuitable to proper ſtocks cannot however always be had. Stock and cion are to be both of a *ſize*, or rather nearly ſo, is better, the ſtock having the advantage in bigneſs; for thus it is not ſo likely to be overgrown, as it happens when the cion is of a more free nature. When the ſtock is overgrown by the cion, it will give it ſome opportunity to thicken, by ſlitting the bark through downwards, in two or three places. This circumſtance is not, however, material in dwarf trees.

Having cut the *head* of the ſtock off, and the cion to its proper length, *ſlope* the lower end of the *cion* about an inch and a half, and to a point; then cut the ſtock to anſwer it, (the cut of the ſtock however may be a *trifle* wider and longer) bark againſt bark, and tie them together *exactly* to their place, and clay it. But for the greater certainty of keeping a cion to the part, cut it ſo as to leave a ſmall *ſhoulder* at the top of the ſlope, and the ſtock ſo as to leave a narrow bit of its crown to anſwer it, and to hold it.

There is a ſort of whip-graffing that has been denominated *ſlicing*, or packing, which differs only from the one juſt deſcribed, in that the ſtock is of *any* ſize; and this is performed by cutting the cion to a face, as before, and then taking off a ſlice from the (beheaded) ſtock,

ſtock, chooſing a *gibbous* part of it ſo as exactly to correſpond with the cut-ſurface of the cion, taking care to fit them ſo that the cion may ſtand erect (or nearly) when clapped to. Shouldering is commonly practiſed alſo in this way.

GRAFFING IN THE BARK, which is ſometimes called *crown graffing*, is perhaps as good a way as any, both for eaſe of operation and certainty of ſucceſs; but it will hardly ſuit any other fruit than *apples* or *pears*, as other cions will be paſt uſe (moſt likely) before the bark of the ſtocks will *peel*, as the time for this buſineſs is towards the end of *March*, or beginning of *April*.

The *head* being cut off, make a ſtrait ſlit down and through the bark from the top, at the place deſtined for the graff, which ſhould be rather *ſoutherly* or *weſterly*. This ſcore down the bark ſhould be *nearly* as long as the ſlope cut of the cion, which may be one and a half, or two inches. Looſen the bark a little at the top of the ſcore, and then with ſome *ſmooth* inſtrument rather of dry hard wood, ivory, bone, or ſilver, than iron or ſteel, open the bark ſufficiently to receive the cion, by puſhing the inſtrument down a trifle below the bottom of the ſlit. This inſtrument ſhould be thin, tapered and rounded towards the point, to ſuit the ſhape of the cion's face; one ſide of it flat, and the other a little convex, the flat ſide being applied to the wood of the ſtock; let it be rather narrower than the cion, that it may not looſen the bark too wide.

Cut a bit of the *bark* of the cion ſmooth off at the bottom that it may not turn up in puſhing down. It will be proper to cut the cion with a ſmall *ſhoulder*, to reſt upon the ſtock. And becauſe when the cion is in, it will bear the bark up hollow from the ſtock, ſcore the bark on each ſide the cion, ſo that it may fall cloſe to the ſtock, and to the edges of the cion. Bind and clay neatly. In this way of graffing there is a

ſort

ſort of agreement between the cion and ſtock neceſſary; the cion not being too big, or the ſtock too ſmall, to prevent a proper *bedding*. If more than one cion be not put in, the ſtock on the oppoſite ſide to the cion ſhould be ſloped up about two inches in length, to half its thickneſs.

This way of graffing is uſed moſt properly with *ſtrong* ſtocks; and ſometimes is applied to large branches, and even trunks of old trees, to change the ſorts, or renew the wood. In proportion to the largeneſs of which, from two to five or ſix cions are put in, and ſometimes of different ſorts; and if the ſtock be large, the more the better, as it heals over the ſooner, and as they inſure the life of the ſtock, by receiving and carrying off the ſap; in which reſpect a ſingle branch of the head of an old ſtock may be left on, for the ſap to paſs off by when it begins to ſtir.

Having inſerted the cions, and bound them, clay the top of the ſtock *well*, ſo as to ſhoot off the wet. In this way of graffing, the cions are liable to be *diſturbed*, or moved from their places by ſtrong winds, and the beſt preventative is to tie ſmall long ſticks to the ſtocks, and then the cions to them, taking care to place the ſticks ſo as not to *force* the cions; and as the ſhoots proceed to puſh they may be faſtened to the ſticks alſo, and ſo grow two years, when nature will need no farther aſſiſtance.

SIDE-GRAFFING is done in the *bark*, much like *inoculation*, a cion being inſerted inſtead of a *bud:* but remember, there muſt be a fluent ſap firſt, i. e. the bark muſt part *readily* from the wood, before this mode of graffing is attempted. The *head* of the ſtock is *not* to be cut off, only thinned a little if it be big, and the ſide ſhoots taken away. The bark of the ſtock, where the inſertion of the cion is to be, muſt be cut through in the form of the letter T, as wide and as long as is ſufficient to receive the cion, cut as before, with a ſlope face of at *leaſt* an inch long, taking

advantage, if (it may be) of a part of the ſtock, that is a little *gibbous*. Let the bark of the ſtock be neatly raiſed to receive it, but yet no more than neceſſary; a little bit of the bark may be ſliced off the part that is over the croſs cut, to receive the cion the better.

APPROACH GRAFFING, or INARCHING, is performed (in *April* or *May*) when the ſtock we would graff, and the tree we would propagate, grows ſo near together, as to be brought conveniently into contact, and the nearer the graff and the ſtock are of a ſize the better. This mode of propagation is eſteemed the *ſureſt* of all, as it will conjoin branches of trees which are ſcarcely congenerous in their nature; and in truth, ſome things cannot be ſo well propagated any other way. It is a method that is, or can be, ſeldom uſed for common fruit trees; but if any one wiſhes to try the experiment, the *ſtock* or ſtocks muſt be planted at leaſt a year before, firſt making the ſoil good, as it may need it, being ſo near another tree, for it of courſe muſt be cloſe.

Plants in *pots* or *tubs* being eaſily brought together, are frequently propagated this way; ſo that *inarching* is uſed much in *green-houſes* and *hot-houſes* for various things, as *oranges*, *lemons*, *pomegranates*, *jaſmines* and *vines* ſometimes: *oranges* and *lemons* thus treated in *May* will be united by *Auguſt*.

The *method* of *inarching* is, bend the beſt ſituated young branch of the tree or ſhrub to be propagated, to the ſtock to be graffed, and having determined on the part at which moſt conveniently to fix the ſhoot; cut the bark of that part of the ſhoot off, with nearly half the wood, (not to touch the *pith*) to the length of about three inches for a ſtrong branch, or leſs for a weaker. Then cut exactly ſo much of the bark and wood of the ſtock off, as will receive the cut part of the branch, or ſhoot, ſo as to bring *bark* and *bark* in contact in every part; and if the contrivance of *lipping* be uſed, it

it will ſecure them better together. Bind and clay, and if in open ground, fix a ſtake to tie the work ſo that the wind may have no power over it; a tie alſo to a neat ſtick may be proper for thoſe inarched in pots, &c.

As ſoon as the graff has *taken*, which will be probably in four months, (except in the harder woods,) let the head of the ſtock be ſteadily cut off with a *keen* knife, three or four inches above the binding, which then removing, bind and clay again, to remain about a month. In *March* following, cut off the branch from the parent cloſe to the graffing, and alſo the ſtub of the ſtock that was left. The head of the ſtock is ſometimes cut off before graffing, in which caſe a ſloping cut half way the thickneſs of the ſtock, is to receive the cion; but here the graff and the ſtock muſt be both of a ſize, or nearly ſo. There has been this *diſtinction* made, to call it *inarching* when the head is cut off, and *approach* graffing when it is not. Gardeners moſtly prefer the former method.

BUDDING or INOCULATION, though here laſt mentioned, is the moſt conſiderable mode of propagation, and is a pretty ſummer buſineſs. *Apricots*, *peaches*, and *nectarines* are always propagated this way, and *plums* and *cherries* may be. *Pears* are ſometimes budded, and *apples* have been, but the ſucceſs is uncertain. Not only *fruit*, but *foreſt*, and *ornamental trees* and ſhrubs are inoculated. The *branches* alſo of trees as well as ſtems are ſometimes budded, which is beſt done on two years wood, though it may be on both younger and older.

Inoculation begins as ſoon as *good* ſhoots with good eyes, of the *preſent* year can be had, ſo that the ſeaſon may be reckoned from *Mid-June* to *Mid-Auguſt;* but about *Old Midſummer*, or rather after, is the uſual and beſt time for the work: it ſhould be done in a *morning* or *evening*, (the latter rather beſt), except the day be cloudy, when any part of it will do.

Apricots

Apricots being firſt ready, the budding ſeaſon begins with them. The *ſtocks* to be uſed are thoſe of the *plum* (raiſed from ſtones or ſuckers) when half an inch thick, a little under or over, and the operation is to take place from four to eight inches from the ground.

Peaches and *nectarines* are propagated on the ſame ſort of ſtocks; but if the plum ſtock is firſt budded with an *apricot* (very low), and when of proper ſize budded with a peach, and eſpecially a nectarine, the advantage is reckoned that it takes beſt ſo, and comes to a better bearing, producing an improved fruit, and particularly the *red Roman nectarine*. *Apricots* may be expected to be leſs luxuriant by *double-budding*, in which caſe the firſt bud ſhould be of the *Bruſſels* ſort.

Plums and *cherries* may be inoculated on ſucker ſtocks of any kind; yet if a free growth is required, (as for ſtandards,) ſtocks raiſed from ſtones are beſt; i. e. plums on plums, and cherries on cherries, though they will take upon each other.

Pears, if for *ſtandards*, ſhould be inoculated on pear ſtocks, and on thoſe raiſed from ſeed, rather than ſuckers, but if for dwarfs, quince ſtocks may be beſt uſed, to keep the trees from growing off too faſt, and ſo getting ſoon too big for their allotted ſpace; *white thorn* ſtocks are ſometimes uſed with the ſame view, but the fruit gets ſtony.

Stocks for budding *dwarfs* ſhould be three years old; but for *ſtandards* four or more, though ſmall ſtocks may be budded for ſtandards alſo, (as mentioned before) if the ſhoot proceeding from the *bud* be trained to a ſingle ſtem, till of ſufficient height to be topped in order to form a head. *Standards* ſhould be from three to ſeven feet high, before they are topped, according to the height they are deſired to be of, as *half* or *full* ſized; but *dwarfs* for training can hardly branch off too low, being budded at five or ſix inches, or leſs from the ground, the ſhoot from the bud ſhould be ſhortened (at a year's growth) to five or ſix eyes, or

to

to four that are well placed; i. e. with a *lateral* direction for the wall.

Though the longer *inoculation* is deferred, the riper the ſhoots will be for furniſhing *buds;* yet there is this advantage in beginning as early as may be, that if the budding appears not to have taken, the work may be done again before the ſeaſon is out. Or, to *inſure* ſucceſs, two buds may be inſerted in the ſame ſtock, (but not in a direction under one another) and if both fail this year, the ſtocks may do again the next, as the heads in graffing by inoculation are not to be cut off till the ſpring following, becauſe the inſerted buds do not puſh till then, when they will grow off *apace:* In a very early inoculation, the bud *may* ſhoot the ſame year; but it then comes weak, and will hardly endure a ſevere winter.

Let the *cions* to procure buds for inoculation, be taken only from the outſide branches of *healthy* and *fruitful* trees. If *early* budding be attempted, it will be proper to cut off ſome ſpare ſhoot, (not fit for the purpoſe,) to *try* firſt whether the bark will yet *readily* part from the wood.

The *ſeaſon* being right, and the cions at hand, having a ſharp narrow bladed *knife*, and neat tough wet *baſs*, ſet about the work *adroitly*, for the quicker it is done the better; but "make no more haſte than good ſpeed." Keep the *bud*, as much as may be, from *ſun* and *wind:* they muſt not be taken from the upper part of the cions, as the bark and buds there are too raw. If cions, or buds, be brought from any diſtance, they ſhould be conveyed in damp (not wet) moſs, or graſs, and never kept above a day and night, but the ſooner they are uſed the better.

Before the *buds* are *prepared*, get the ſtock ready to receive them, by taking off lateral ſhoots, leaving an uncut ſingle ſtem. At the part fixed on for the inoculation, (which ſhould be ſmooth, and rather on the

north

north ſide) cut the bark through to the wood, in form thus, T, the croſs and the down ſlit being of the length neceſſary to take in the bud, which may be cut with from one to two inches of bark; putting the point of a knife (or ſome inſtrument rather not of iron or ſteel) in to the top of the down cut of the ſtock, *raiſe* the bark all the way to the bottom, ſo that it will *juſt* receive the bud eaſily. There are knives made on purpoſe for budding with flat ivory hafts.

To procure proper *buds*, put your knife in (ſuppoſe) about three fourths of an inch above the eye, and with a ſlope downwards cut the cion half through, then do it at the ſame diſtance below the eye, and ſloping it upwards cut up the middle of the wood, till the knife meets the upper inciſion, ſo the *eye*, or bud, will be directly in the middle.

The next ſtep is, to *ſeparate* the wood from the bark, which is to be done thus: with your nail, or the point of a knife, looſen the bark at the top, and ſtrip it from the wood; or rather with a ſwan or large gooſe quill, made in the form of an *apple ſcoop*, (having a regular *ſmooth* edge) puſh it down between the bark and wood, preſſing it againſt the wood.

Examine the inſide of the bark, and if there is a *cavity* juſt behind the *eye*, or *bud*, it is good for nothing, and another muſt be procured; for the cavity ſhews, that the *root* of the bud is with the wood, inſtead of being with the bark.

The *leaf* that grows by the eye is to be cut down to near its footſtalk, ſo as to leave only a little bit of it to hold the bud by while inſerting it in the ſtock.

See that the *bark* of the ſtock is looſened a proper length and breadth, and if, when the bud is put in, it ſhould prove a little too long, cut the ſpare part off; ſo that the top of the *bud* (being ſquared) falls in ſtrait with the croſs cut of the ſtock. Thus fixed, bind it *moderately* tight in its place with the *wet* baſs, beginning at the bottom, and paſſing by the *bud*, go on to the

the top, or rather above it. Care muſt be taken that the bud is not hurt, and it is to be left only juſt ſtarting out between the baſs: This is the mode of *inoculation* commonly uſed.

Some gardeners inſiſt, that it is beſt to cut the bark of the ſtock thus ⊥, and ſo inſert the bud by puſhing it *upward* inſtead of downward, becauſe by this method it ſhoots off wet effectually.

Others *ſquaring* the bud to an oblong, clap it to the place to be inoculated, and ſcoring the ſtock to its ſize, cut out the bark of the ſtock from within the lines, and having put the bud to the place, bind it in: but great *exactneſs* muſt in this way be obſerved, that the edges of the bark do regularly touch.

Another way, and perhaps as good as any, is this: — clap the bud to the ſtock, (the bud being firſt ſquared) and rather before it is ſeparated from the wood, and ſcore the bark on each ſide, and acroſs the top; and inſtead of ſcoring the bark at the bottom, do it a quarter of an inch (or rather more) above the bottom ends of the ſide lines; then take off the bark between the lines, and place the bud, by puſhing it down this piece of bark, (being firſt looſened) which will ſerve to hold it. Bind cloſe, but not over tight. If in this method the bud fits *exactly*, it is a very ſure and neat way of inoculating. As the ſcoring of the ſtock is beſt done before the barking of the bud, a little allowance muſt be made, as when the bud is ſeparated from its wood, it will ſpread a trifle wider.

If the *buds* have *taken*, it will be ſeen in about three weeks, or a month, by their appearing *freſh* and *plump*. As often as any ſhoots appear *below* the budding, cut them off, and alſo ſome of the ſhoots above, if there are many of them; for it is not proper that an inoculated ſtock ſhould have a large head. In a month looſen the bandage, by taking it off, and putting it on gently again, for another month.

In

In *March*, cut the head of the ſtock off with a keen knife, cloſe behind the budding, in a ſloping direction; ſome leave three or four inches of the ſtock above the bud till the following ſpring, and it will ſerve to tie the new ſhoot to, in order to keep it to a proper erect direction. Suffer no ſhoots from the ſtock, but rub the buds off as ſoon as they appear. It may be of uſe to *ſhade* inoculated buds a few days by a leaf, or a bit of paper.

* * * * * *

Perſons deſigning to *graff*, are apt to neglect cutting their *cions* till they get too forward, therefore remember to be *in time*. To do the work well, there muſt be good *tools*, &c. and particularly a *keen* knife. Chooſe as good a *day* as can reaſonably be expected, for bad weather occaſions hurry and embarraſſment; but defer not *too* long on account of the weather. In handling *cions*, take care of their eyes, that nothing bruiſes them, and particularly of the *buds* uſed for inoculation.

Some motion of the *ſap* is proper at the time of *all* graffing, but a *free* motion is neceſſary for the mode of graffing in the *bark*, and as on the ſunny ſide of the ſtock it moves freeſt, and is the beſt aſpect as to weather, inſertion of *graffs*, though not *buds*, if it can be avoided, ſhould be always on a part of the ſtock inclining to the *Weſt*. Remember to take off, or at leaſt to looſen, the bandages on graffs, as ſoon as they have taken. Silver (as a fruit knife) is beſt to raiſe the bark with, or any thing is preferable to iron.

Though *inoculation* may ſeem the ſloweſt mode of propagating fruit-trees, it proves eventually the quickeſt; and is the moſt certain way to produce free growing trees, with a well covered ſtock. The inſertion of

a *bud*

a *bud* has alſo the advantage of a *cion*, as a failure does not hurt the ſtock ſo much. Avoid this work in very hot, dry weather.

Many *words* have been neceſſarily employed in directing to the buſineſs of *graffing*, but let not *that* circumſtance deter ingenuity from ſetting about the work; or a few failures prevent perſeverance, which will at length be crowned with ſucceſs, and the atchievement be a pleaſing reward. Make proper marks, or memorandums, to be aſſured hereafter of the ſorts.

Lipping, mentioned page 88, is cutting the ſlope-face of the cion ſo as to leave a rib down the middle; and then cutting out a notch in the part of the ſtock that is to receive it.

Double-budding, mentioned page 90, is twice-budding, firſt the ſtock, and then the ſhoot when it is grown big enough, which is in two years.

SECTION VIII.

OF PLANTING.

AS ſo much depends upon proper planting, every attention ought to be paid to it. This buſineſs may be arranged under theſe ſeveral heads. 1. The choice of plants. 2. The act of planting. 3. The ſoil. 4. The ſituation. 5. The ſeaſon.

1. As

1. As to the CHOICE of plants. Trees ought to be the *beſt* of the kind; and therefore no care in *raiſing*, or caution and expence in *purchaſing*, ſhould be ſpared, that at leaſt there may be a fair *proſpect* of ſatisfaction. To plant, and after waiting a long time, to be diſappointed, is rather a *ſerious* misfortune; eſpecially when the work is to be begun again late in life.

Having ſome confidence that the *ſort* is right and good, the *plants* muſt be ſeen to, that they are *healthy*; they ſhould appear *ſound* as to any external injury. If they are of a ſquat, weak, buſhy growth, there can be little expectation of their becoming good plants; though it may ſometimes happen that a tree of poor promiſe will rally.

Trees graffed on old *ſtunted* ſtocks, or that have often been *removed*, or frequently *cut down*, ſeldom grow off well in any ſoil, and ſhould be rejected. Let thoſe that are purchaſed be ſeen to, as *nurſerymen* often have *ſuch* trees, having remained long on hand.

Good *young trees* have a ſmooth, bright, and ſtrait appearance, rather of a robuſt growth than otherwiſe; though the moſt luxuriant are not to be preferred, for their wood is raw, and wants that firmneſs which is neceſſary to fruitfulneſs; they may get off this crude ſtate in time, but the moderately free-growers are beſt.

Young fruit-trees are the beſt to plant; for though old ones may ſometimes ſucceed with good management, yet they are liable to ſtunt, and dwindle off; whereas the former eſtabliſh their roots quickly, and grow off apace; ſo that young trees planted at the ſame time with old ones, generally overtake them in a few years, and are ſuperior.

To have *moderate* ſhooting trees for the wall, or *eſpalier*, chuſe ſuch whoſe twigs are rather ſlender, provided they are healthy: they will not only be kept eaſier within compaſs, but in general prove more fruitful.

2. The

2. The ACT of planting. Trees taken up for planting ſhould be dug *carefully*, with (as much as poſſible) their *full* roots. Many a good tree has failed merely by being taken up badly, and then planted ſo. The roots of fruit-trees are often not only mangled, and too few, but are alſo put into the ground without any dreſſing or care.

The leſs roots are expoſed to the *air* the better, and the ſooner trees are planted after being taken up, the more likely they are to ſucceed well. Trees properly packed (i. e. the roots well covered) may live out of ground ten days or a fortnight, in *autumn*, or early in the *ſpring*; but nothing except *neceſſity* will juſtify the keeping a tree out of ground a day longer than can be helped, for the fine roots dry off apace.

If it be *determined* for any length of time before hand, when and where to plant, the *opening* the ground, and expoſing the holes to the *ſun* and *air*, (and if it may be to *froſt* alſo) will both correct crudities in the ſoil, and enrich it from the various ſtores of the atmoſphere; this opening ſhould be as wide and deep as convenient, that the benefits of the air may be extended.

Some people do the *work* of planting very *idly*, as if it were ſufficient to ſee that a tree has a root, and that it was only neceſſary to *hide* it in the ground. Every one who plants trees ſhould ſtand by himſelf, or have ſome truſty perſon to *ſee* the work done, or the neceſſary labour may not be beſtowed. It is frequently the way (for inſtance) to dig a hole *ns* bigger than will receive the roots of a tree twiſted and forced in; but being thus cramped, and the veſſels of their roots diſtorted and broke, it cannot be expected that ſuch *unnatural* treatment ſhould anſwer.

But the above *violence* is not all; the roots are confined as in a priſon, (in a tub or a baſon) which, if the ſoil is ſtrong, detains wet, and chills and cankers, if not rots the fibres. To plant well, the *roots* of a tree ſhould have liberty to ſtrike out freely every way, and

the ground well broke for their *eaſy* progreſs. Let the hole for a tree be looſened about two feet deep, and as wide as will be much more than ſufficient to receive the roots in their *full* ſpread as they grow, with little or no direction given contrary to the original one.

When the tree is to be *planted*, take out the earth a little lower than neceſſary for the roots, at the depth the tree is deſigned to ſtand; then dig the bottom to the full ſpade's depth. Trim any *dead* or *damaged* part of the root clean off; thin it of the finer fibres where withered, or matted thick, and the more, according to the time the tree has been out of the ground, for the fine, *if* dead, ought not to be on. Trees moved only from one part of the garden to another, need have but few fibres cut off, but *ſome* amputations are neceſſary to help the ſooner to new roots, which ſhortening always forces out. If the root has a *tap*, (or downright ſpur) it ſhould be cut to the general level of the other roots, and never be left longer than a foot from the higheſt part of the root. Thoſe great roots that lay aukward, or croſſing, ſhould be judiciouſly rectified with a ſharp knife; be cautious, however, of taking off *too* much, for the head will produce ſtronger branches in proportion to the goodneſs of the root. Though it be little practiced, it may be very well to apply ſome *mixture*, as of roſin and bees wax, to large amputations: Cow dung may do.

The *head* of a tree ſhould be ſomewhat conformed to the root. *Some* reduction of the head may take place at the time of planting; yet not *all* that may be thought neceſſary ſhould be taken off at firſt; but let alone till the ſap ſtirs at ſpring, and then care ſhould be taken to proportion the head to the root; and not leave on a tree too many buds, for a few ſtout branches are preferable to many weak ones. This is the ordinary practice with reſpect to *wall trees*, and why not of *all* others? See articles, *Orchard* and *Pruning*, Sect. 3 and 12.

The

The *hole* being made as directed, form a little *hillock* in the middle of it to lay the roots *on* and *round*; clap the tree upon it, and having thrown on a little good and *well-broke* mould, give the tree a *gentle* ſhaking lift, which will let the earth in cloſe among the roots, and bring the tree up towards its proper height; by not doing this, the roots are ſometimes turned up at the ends, inſtead of laying *rather* downwards: Set the tree high enough to allow for a ſettling of the earth, in proportion to the depth it was looſened. *Young* trees, however, ſhould have their roots nearly upon a *level*, and ſo muſt have their ends raiſed with the hand, if they are ſuſpected to be too much depreſſed. The mould ſhould be thrown on gently, a little at a time; and if ſome that is finer and richer than the reſt be put about the roots, juſt to cover them, it would well anſwer the trouble, helping the tree to ſtrike freſh roots, and grow off the faſter.

Trample the mould *gently* about the roots, beginning at the outſide of the hole, and ſo towards the ſtem. Finally, leave the ground a little hollow on the top, to receive rains or waterings.

As to *depth*, trees in a *light* dry ſoil may have the top of their roots ſettled at about five or ſix inches below the ſurface, and in a *ſtrong* ſoil about three inches; or it may be a general rule to plant a tree no deeper than it was before: for trees planted too deep never do well. Always keep the roots of a tree *above* a heavy clay, for the making trenches in it will not anſwer, and an unhealthy tree may be looked for. See next article *Soil*. If the good ſoil is *thin*, the roots ſhould be almoſt planted in ſight, raiſing the earth about them. Take care to *protect* the roots of all, but eſpecially of high ſet trees, from froſt the firſt winter, and drought the firſt ſummer. This covering of new planted trees about their roots from extremes of weather, may be either with good ſolid *turf*, *litter* with *ſtones* on it, or *ſtones* alone, which by their weight help to hold the tree faſt.

Litter ſhould be laid near a yard round, and five or ſix inches thick, to keep off ſevere weather. Where plenty of *moſs* is to be had, it is a neat material to lay about roots to keep them from drought. If litter alone is laid about trees, (particularly againſt an old wall) *mice* are apt to harbour in it, and bark them: where ſuch covering is uſed for winter, move it early in the ſpring, and ſupply the place with turf, which will be proper to continue all ſummer.

Watering is to take place if trees are planted *early* in autumn, which ſettles the mould about the roots, but let them not be ſodden with it. *Late* in ſpring water will be ſafely and neceſſarily applied, and muſt be repeated alſo if dry weather; but yet with caution, for many new planted trees have been injured (if not killed) by keeping the roots wet. Late planted trees ſhould be *occaſionally* watered throughout the ſummer: thoſe planted in winter need none, if the ſpring be not very dry.

In planting *wall trees*, (the budded part outwards) try in the hole which way they will beſt ſtand againſt the wall; and if they have a head deſigned to remain for training, place it carefully for the branches to be laid to; but keep the tree as *far* from the wall as *may* be, (ſuppoſe eight inches) that the roots may have the more room to ſtrike behind: cut off, or ſhorten much, all roots whoſe *direction* is ſtraight towards the wall. Nail the tree to it, that wind may not diſturb the roots.

In planting *ſtandards*, it will be proper to fix a *ſtake* near the ſtem to faſten the tree, in order to prevent the roots being diſturbed by wind, which prevents their ſtriking out new fibres; rocking about opens the ground alſo about the ſtem, and admits froſt, by which a tree is ſometimes loſt, or ſucceeds badly. This ſtaking is beſt done while the holes are *open*, and the roots of the tree ſeen, as by driving a ſtake in afterwards, it might damage ſome principal root, and the hurting a root is to be avoided as much as bruiſing a branch.

Take

Take care to fix the ſtake firmly, and to tie the tree ſo with a hayband, that it may not eaſily get *galled*. Twiſt the band cloſe round the tree firſt, and then round the ſtake and tree.

In *late* ſpring planting it will be found of good uſe to make a mixture (in a barrow) of *freſh cow dung* and *fine mould*, half and half, to put about the roots, which will greatly help to keep them cool, and plentifully to nouriſh them. In default of cow-dung, a *puddle* of fine ſifted mould and water will do. Or, if the ſoil is light, mix half mud from a pond or ditch.

Circumſtances *may* occur to make *ſummer* planting deſirable, if it could be ſafely done. It is certain that roots quickly ſtrike in ſummer, and if the head of the tree is a little reduced, and ſome ſhading contrived for a while, even *wall trees* may be then planted with cow dung. But the *greateſt* point in this buſineſs is, that the tree be not *out* of the ground ſo long as to dry the roots; by ſome means they ſhould be kept cool, and if dried, put into pond water a few hours before planting. Trees thus planted will not need watering for a long time, and muſt not have it, for over moiſture might rot the delicate new fibres.

3. The SOIL for planting fruit trees ſhould be *good*, or nothing pleaſing can be expected: It ſhould be ſweet and nouriſhing; and therefore if not naturally ſo, it is to be improved by art and labour. Tillage or breaking up a ſoil, to expoſe it to the atmoſphere, is of much benefit. See article *Soil*, in the *Formation of a Garden*. Sect. 3.

If nothing more can be done at the *preſent*, at leaſt make the ground fairly good where the tree is to be ſet. Two or three barrows of *freſh* earth, if of a good quality, is far preferable to dung; but if the ſoil really needs manure, let it be well incorporated by the ſpade; and work ſome rotten dung in *deep*, below the roots, which will be properly conſumed before the new roots reach it; much muſt not be uſed.

In the caſe of only making the ſoil good for the *preſent*, the firſt opportunity, (or at leaſt before the roots ſpread far) ſhould be taken to extend the benefit as far as may be, even to ſeveral yards round, and let this work be done deep enough, or as low as the part made good for firſt planting, i. e. two feet, or as near upon it as the caſe will allow. In a few years this attention ſhould be extended (in bad ſoils) to where it may be thought *poſſible* for the roots to have reached. For want of this, a tree ſometimes fails when juſt come to its full ſize and principal time for bearing. When roots reach a weak, ill-conditioned, poiſonous ſoil, the tree *muſt* fail; and it ſhould be remembered, that the *extreme* branches of the root are what chiefly nouriſh a plant, and not thoſe about the ſtem.

Fruit trees (though they like a rather ſtrong ſoil) will not proſper, or hardly grow, in a *cold* clay; but in a ſoil that is tolerable above, they may be planted, by improving, or raiſing this, as the caſe may require, and cautiouſly avoiding going into the clay. Some perſons have laid flat ſtones, or tiles, below the root to a conſiderable diſtance, which perhaps may anſwer; but it ſeems adviſable only to do it about a *foot* ſquare, (or a little more) as this may give the roots a deſirable horizontal direction. It has been recommended to do this in *all* kinds of ſoil, in order to inſure a more ſuperficial ſpread, than without ſuch contrivance could be expected. If the *ſoil* be good, (at the ſame time ſtrong) above any bad ſoil, and the roots take to run towards the ſurface, it is ſurpriſing how trees will thus proſper.

When planting takes place *ſuperficially*, let a hillock of earth be laid round the roots, and the tree ſecured by a ſtake for two or three years to hold it ſteady; and keep *turf* or *moſs* about the root till the tree is well eſtabliſhed. The hill may be from ſix inches to half a yard high; in the latter caſe, lowering it a few inches every year in autumn till within ſix of the root.

In a ſoil that trees are found to *canker* in, and get otherwiſe diſeaſed, it is of no uſe (generally ſpeaking) to *wait* their getting better; but if there is any ſpot of a more promiſing quality, thoſe that are not too old and far gone may be removed there, and perhaps recover; but let the *root* be examined, as well as the head, to cut out any *diſeaſed* part. If the ſhoots ſhould be *weak* the firſt year, prune down cloſe the ſecond, and ſtrong wood may poſſibly follow.

With reſpect to the *ſoil* that ſuits every *particular* kind of tree, there is ſome variety of opinions. Generally ſpeaking, a true *loam* ſuits every thing. See *Formation of a Garden*, Sect. 3.

The following particulars ſeem to have a pretty common conſent. *Vines* love a rich dry ſoil, gravelly or ſandy, if it does not bind. *Figs* like much the ſame ſoil, though they need not ſo rich a one: aſhes are good in the ſoil for figs. *Apricots* flouriſh in a light loam; but *peaches* and *nectarines* ſhould have a ſomewhat ſtrong loam, and the latter needs the warmer or richer ſoil of the two. *Pears* like a ſtrong but dry ſoil; *apples* a ſtrong and a cool one, if it is not wet. *Cherries*, *plums*, *walnuts*, and *mulberries*, prefer a dry, ſandy, gravelly, or light ſoil, though they will grow in a ſtronger; *plums* do very well in a moiſt ſoil, and produce the larger fruit in it, but the flavour is inferior. *Quinces* flouriſh moſt in a rich and moiſt ſoil, as by a brook or river's ſide, or where a rich waſh from ſinks, or dunghills, runs occaſionally about their roots: in a dry ſoil their fruit is ſmall, though higher flavoured: It is an univerſal rule, that fruits are forwarder and more grateful in dry ſoils, but of leſs ſize.

Though the *vine* be planted in a right ſoil, yet it will require to be fed and enlivened with ſome ſpiritous manure, either in *autumn* or *ſpring*. For this purpoſe water impregnated with *ſheep's dung* and freſh *urine* has been uſed. The top ſoil being removed, *bullocks*, or which is beſt, *hogs blood*, is ſometimes

applied; or it may be let in by making holes with a ſmooth ſharp-pointed ſtake, not too near the ſtem. A little *ſheep's dung*, or that of *poultry*, dug in regularly every *autumn*, is a good, neat, ſtanding rule.

4. The SITUATION propereſt for planting any particular kind of tree is to be conſidered; for ſome like a low, ſome a high, ſome a moiſt, ſome a dry ſituation; but it is ſpoken here chiefly of *fruit trees*. Particularly obſerve that *pears* graffed on *quince* ſtocks, muſt have a moiſt ſoil, or they will not do well.

The *general* ſituation of a country will in a meaſure rule; for though *England* be but an iſland it has many *climates* in it, and certain plants will do better in one place than another, (even within the ſpace of a few miles) as to effects from weather. The difference between hill and valley in the *ſame* place, is ſomething, ſo that in the latter the tender bloſſoms of trees ſhall eſcape, when in the former, unkind winds ſhall cut them off: — not that valleys are always ſafe, for they have ſometimes deſtructive blaſts from miſts.

Peas ſown to ſtand the winter, in a garden on a hill, and in another only a hundred yards below, in a vale, the former expoſed, and the latter well ſheltered, will demonſtrate what *ſituation* will do; for the peas below will live when the others are cut off, and perhaps come in a week earlier, when both ſurvive the winter uninjured.

In very *expoſed* places, eſpecially *northwards*, little *fruit* can be expected from the more delicate *wall trees*; it is prudent therefore to avoid planting in cold places the *tendereſt*, or the *earlieſt*, or the *lateſt* ſorts. The difference of *latitude* between *Middleſex* and *Northamptonſhire* makes commonly a fortnight in the coming in of many things; ſo that, generally ſpeaking, what is called an *October* peach, is of little worth in the latter county, though in the former it may do well: Without plenty of walling for *experiment*, therefore, do not plant late fruit far northwards of *London*.

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The farther *north*, however, is not a certain rule for the productions of the garden being *proportionally* later; for in some parts of *Yorkshire* they produce vegetables and fruits, nearly as early as about *London*. This has been ascribed to subterraneous heat from coal beds, or minerals, acting as natural hot-beds; but it may be attributed simply to a rich, warm, and deep soil, having gravel below it, especially when in a valley sheltered by winds on the cold side.

With regard to *situation*, we should consider the garden *itself*, and not plant choice fruits in a cold or shaded part of it: the *aspect* must be good for them as well as the soil. From an error of this sort, *Vines* have frequently been planted and pruned for years, producing nothing but wood and leaves.

Figs and *vines*, *nectarines* and *peaches*, (as natives of hot climates) should have a *full* sun here, or little fruit can be expected from them; and *Apricots* ought to have a good share of it, though they do very well (in some places) against an *east* wall, and perhaps against a *west*. An *east* aspect is not so safe as a *south* one, as to the embryo fruit at the time of blossoming, nor does it bring the *apricots* so forward; but the fruit is commonly better: it has the earliest sun all the morning, and the benefit of a gentle warmth afterwards, by the wall, (the sun shining hot on the other side) if the tree is nailed properly close. See *Formation of a Garden*, articles *Situation* and *Aspect*.

From what has been said on *situation*, the young gardener will be led to make some discrimination in planting, and not hope to succeed when working against nature. If his garden is small, let him contract his desires, and proceed upon sure grounds: but if large, experiments and risks are not of much consequence. Favourable and unfavourable seasons make a great difference; but hope should have a foundation, and we cannot expect a prosperous end, without the use of probable means.

5. The SEASON for planting is a matter of conſequence, though ſome perſons are apt to neglect it, who ſhould, and do, know better. The proper rule is, to plant as *early* in the ſeaſon as can be; ſo that if the ground is ready, trees had beſt be put in when the leaves *begin* to fall, i. e. in *October;* yet ſome good planters have recommended even an earlier time than this; and ſcruple not to plant all the latter half of *Sepetember*, though the leaves be full on. Some trees will form freſh roots in the winter; and thoſe which do not, yet get ſo united with the earth, and prepared for ſtarting in the ſpring, that they are ready to anſwer a ſupply of juices much more freely than when late planted; and conſequently the new ſhoots *muſt* be ſtronger. Let nothing but neceſſity put off planting in *autumn*, except indeed the ſoil be a cold one, and then the work done early in ſpring is proper.

The ſeaſon for planting in a dry ſoil *may* be all winter for *deciduous* trees, i. e. thoſe that loſe their leaves; but all *evergreens*, (except the *Scotch fir*, which may be planted at any time) ſhould be moved *early* in autumn, or *late* in ſpring, and rather the latter, as they are ſomewhat uncertain in taking kindly to the ground, eſpecially if the weather is unfavourable at the time of planting. The *oak* and *larch* (though deciduous) are removed ſafeſt in the ſpring. In ſpring-planting give a ſound watering at the time, and if late in the ſpring, repeat it once a week or ten days, in dry weather.

Let even the meaneſt trees and ſhrubs, as *currants*, *gooſeberries* and *raſpberries*, have the like attention paid to them as to their ſuperiors; for their fruit will prove the finer, and the argument is cogent for an *October* planting of theſe, as they are expected to bear the next ſeaſon. Let them be taken up, and planted with care; for the *beſt* way of doing *every* thing ought to be the rule of practice in all caſes, and a *gardener* ſhould follow it above all perſons.

SECT.

SECTION IX.

OF SHRUBS, SHRUBBERIES, &c.

WE are indebted to SHRUBS for much of the *pleaſure* we enjoy in our gardens and plantations, and they juſtly merit every care, though they produce us no (or few) *edible* fruits. They aſſiſt in forming an agreeable ſhade, they afford a great variety of flowers with leaves differently tinged, and are ſtandard *ornaments* that give us no great trouble.

Of *ſhrubs* too little care (however) in general is taken to *plant* them properly, or even to chooſe good plants for the purpoſe; and hence they often *fail* to flouriſh, and are mortifying us with a dwindling growth, and unhealthy appearance, when they ſhould have become objects of admiration.

Many *ſhrubs* are *raiſed* from *ſuckers*, others from *layers*, ſome from *cuttings*, and moſt may be propagated from *ſeeds*, which, though the ſloweſt method, generally produces the fineſt plants. Before they are planted out for *ornaments*, they ſhould be trained two or three years in a nurſery, to be formed into a full and regular ſhaped *head*.

Though *deciduous* ſhrubs may be planted almoſt at any time, yet *October* is much the beſt month, eſpecially if a moiſt ſeaſon; the exception being made as to a cold wet ſoil, in which all ſorts of planting (as obſerved before) is beſt done in ſpring.

Evergreen ſhrubs muſt be cautiouſly planted and ſhould not be ventured upon in winter, and even in

autumn and ſpring ought not to be meddled with in harſh weather: drying winds are apt preſently to injure their roots. It is a good rule, let the weather be what it will, and the ſorts what they may, to expoſe the roots to the air no longer than can be helped; *evergreens* ſhould therefore be immediately planted after they are taken up, and their roots alſo very carefully preſerved whole. And if the ſhrubs are ſmall, and it can be, let them be removed with balls of earth to them, trimming off projecting ends.

As *ſhrubberies*, *clumps*, &c. are often made on poor or indifferent ground, the ſoil ſhould be previouſly cleared, well dug, and *trenched*, and that as long before planting as may be. For *ſpring* planting, this preparation work ought to be done in *autumn* or in *winter*, that the ſoil may have the benefit of froſts, and other helps from the atmoſphere, which is a circumſtance of much conſequence in the caſe.

Tillage not only ſaves manure, but is ſuperior to it, where time can be allowed exhauſted ground. In planting *ſhrubs* and *trees*, it is deſirable to do without *dung*, as much as poſſible; and therefore a little *ſoot*, or *turf-aſhes*, &c. ſprinkled over the ridges of trenched ground, is good; and if the trenches were turned over once a month, the advantage in ſucceſs would be fully anſwerable to the trouble.

As *ſpring* is, on the whole, rather the fitteſt time for moving *evergreen* ſhrubs, and as the *deciduous* ſorts do then alſo very well, *ſhrubberries* and *clumps* will properly enough be the work of *March*, a little earlier or later, according to the ſoil and ſeaſon. Light ſandy ſoils ſhould always be planted in good time, and any fair weather that appears ſettled, ſhould not be neglected: the beginning of *April*, however, is by ſome reckoned the beſt ſeaſon for planting ſhrubs. A good medium way is to plant the *deciduous* ſorts the beginning of *March;* and, leaving places for the *evergreen* kinds, plant them the end of *March* or the beginning of

of *April*. But it were ſtill a better way (if the ground is in order) to plant *deciduous* ſhrubs in autumn, and the *evergreen* ſorts in ſpring.

If *autumn* be the ſeaſon fixed for planting, it will be proper, before the froſt comes in, to cover the roots of ſhrubs, and eſpecially of *evergreens*, with litter, and indeed at *ſpring* it ſhould be ſo; for neither *froſt* nor *drought* ſhould be ſuffered to affect new planted trees, or ſhrubs. Let the outſide plants of a new ſhrubbery, towards the ſun, be covered about the roots all ſummer: Turf will be neateſt.

What has been ſaid of the *act* (or method) of planting *fruit trees*, ſhould be obſerved of *ſhrubs*. In dreſſing the roots of ſhrubs, ſhorten them moderately, prune the heads ſo as to form them handſomely. Settle the ground to the roots by watering, and leave a little hollow round about them for future watering, if the ſeaſon ſhould require it. Let the taller plants be tied to ſtakes, as the wind is apt to diſturb them, and hinder their ſpeedy rooting.

The proper *diſpoſition* of ſhrubs, where there are many to be planted, ſhould be conſidered in ſeveral particulars; for the beauty and proſperity of a plantation depends greatly upon it.

The *diſtances* muſt be according to the *ſize* they uſually attain. Some grow off ſlow at firſt, but afterwards get large; but ſtill theſe ſhould be rather conſidered in a middling way, otherwiſe the ground will be a long time naked. Some ſorts will require not more than a three feet diſtance, others four, five or ſix; but as they are ſmall, when planted, and perhaps much of a ſize, the *future* height and ſpread are frequently *not* conſidered. See Sect. 19.

The *ſituation*, to accommodate them as well as may be, according to their *tender* or *hardy* nature, ſhould be attended to; not to plant evergreen ſhrubs, or the more delicate deciduous ſorts, on the outſide towards the *N.* or *N. E.* and as there may be an irregularity in the

the ground, the lower parts and deeper ſoil will be more ſuitable to ſome, and the higher and ſhallower may do very well for others.

Tender ſhrubs ſhould not only be ſheltered for protection, but be planted in a *dry* ſpot open to the ſun: Some things will live abroad in a dry and poor ſoil, that would ſeldom ſurvive a winter in a rich and moiſt one. The more towering ſorts muſt be placed behind, and the leſs ſo before them, *gradually* declining to the low growing ones, in a ſort of *theatrical* order: This is neceſſary in a *ſhrubbery*, and indeed all plantations, but more ſo in the diſpoſition of plants in *clumps*, keeping the center high, and falling gradually towards the edge. Thus the ſtems, and naked parts of the higher plants are hid by thoſe before them, and the whole appears to the eye a full ſcene of verdure.

The *ſeaſon* of ſhrubs flowering and leafing is a material point to provide for, by a proper diſtribution, that there may be a ſprinkling of decoration every month, in every part. And in this buſineſs, an equally diſperſed mixture of the evergreen, and deciduous ſorts, is neceſſary to be obſerved. See Sect. 19.

As to the *proportion* of this mixture, it will depend upon taſte, and the opportunity of procuring the one ſort, or the other; but the circumſtance may direct (in a meaſure) whether the plantation of ſhrubs be about the *houſe*, or at a diſtance from it. In the former caſe, more *evergreens* ſhould be made uſe of, as in ſight in winter: generally ſpeaking, perhaps, one evergreen, and two deciduous ſhrubs, or one and three may form an agreeable ſhrubbery at all times.

A *regularity* in planting ſhrubs is not neceſſary as to *lines*, but is rather to be avoided, except juſt in the front, where there ſhould always be ſome low ones, and a border for *flowers*, chiefly of the *ſpring*, as ſummer ones are apt to be drawn up weak, if the ſhrubbery walks are not very wide. The flowers ſhould be of the loweſt growth, and rather bulbous rooted. To-

wards the edge may be planted *aconites*, *ſnow-drops*, *crocuſſes*, *primroſes*, *violets*, *polyanthuſes*, *hepaticas*, *wood anemonies*, *daffodils*, *cowſlips*, &c. In open ſhrubberies an edging of *ſtrawberries* is proper, and the *hautboy* preferable, on account of its ſuperior ſhow when in flower; but in theſe ſituations the *wood* ſtrawberry is more commonly planted, as it will produce fruit with leſs ſun and air than any other ſort.

The *management* of a plantation of ſhrubs comes next to be conſidered. It ſhould be kept *clean*, or much of its beauty is loſt. Let it be frequently *hoed* and raked, to give it a freſh appearance, and *prevent* the growth of *moſs*, which ſpreads apace from the ground up the ſtems of plants, and thus injures them much. The uſual time for *pruning* and *digging* about ſhrubs is *ſpring*; but *autumn* (and early in it) is better, if the plants are well eſtabliſhed in the ground, and eſpecially when old and full of roots. The *pruning* ſhould not be late, (*October* beſt) as *ſome* ſorts are apt to lie down; theſe, however, might be left to ſpring, or only ſhortened in part: They ſhould conſtantly be kept free from *ſuckers* and *luxuriant* wood. See *pruning of ſhrubs*. An autumn dreſſing is particularly to be recommended as leſſening the work of ſpring, the hurry of which ſeaſon ſometimes occaſions ſhrubberies to be neglected *too* long, and to be but partially attended to.

The *ſuckers*, or young *plants*, found in digging and dreſſing about ſhrubs, are often left careleſsly on the ground, but if likely to be *wanted*, ought to have their roots buried as ſoon as poſſible: Why ſhould they be ſuffered to wither, becauſe they *may* recover?

For *hedges* about a plantation, (i. e. for the *diviſions* of it) the *laurel*, *yew*, and *holly*, are the principal *evergreens*; the former as a lofty and open fence, the ſecond as cloſe and moderate in height, and to be cut to any thing, the laſt as trainable by judicious pruning to an impregnable and beautiful fence. *Deciduous* diviſions are beſt made with the ſmall leaved *elm*, or the *hop hornbeam*,

hornbeam, as they are *tonſile*, and of a peculiar neat foliage to the very bottom. If a lofty hedge is wanted, the *beech* makes a good one.

Old *walls* and *pales* are ſomewhat unſightly, and if covered with plants are rendered agreeable. The *evergreens* to be recommended for hiding them, are the *laurel*, *phyllyrea*, *alaternus*, *pyracantha*, *yew*, *box*, and *lauruſtinus*; but if the aſpect of the wall be *N.* let them be planted late in ſpring. *Ivy*, *box-thorn*, and other climbing ſhrubs, anſwer the purpoſe: the white and yellow ſtriped *Ivy* are beautiful. If a mere *ſummer* covering be deſired, and the wall is high, *hornbeam*, (rather the *hop*) and *witch elm*, do very well when planted cloſe: *lilacs*, or even *black currants*, alſo may do, and will ſoon come to a cover: But whatever is planted for the purpoſe, let it be kept regularly trimmed, and trained cloſe as may be to the wall. The *gable end* of a building may be covered with a *pear-tree*, or a *vine*, for though the vine ſhould not bear, it will anſwer its prime end, and looks well when in full leaf.

SECTION X.

OF FOREST TREES.

PLANTING of *foreſt trees*, in ſome extent or other, may be an object with ſome young gardeners; and thoſe who have a taſte this way, and ground to exerciſe it on, will amuſe themſelves in a very

very *reſpectable* manner by ſo doing. Let the work be ſet about with all ſpeed and reſolution; for every year loſt to planting is to be lamented, both in a public and private view.

What if *foreſt trees* produce nothing for the table, or no *immediate* profit, they afford, in their raiſing, planting, and nurſing, preſent entertainment of a very grateful kind: they may ever after be viewed as objects of ſatisfaction, and *poſterity* will have reaſon to praiſe the work, and the planter.

Plantations of foreſt trees do very much ornament a country, and there are ſome grounds peculiarly ſituated to become objects of *delight* in this reſpect, which could not be better employed. A place without trees being deſtitute of one of the moſt uſeful materials for buildings, utenſils, &c. is in truth to be lamented as unfurniſhed and forlorn. The demand for *wood* is perpetual, and the conſumption is great; and therefore a proviſion for generations to come, by planting of *foreſt trees*, muſt afford the ſincereſt (becauſe moſt diſintereſted) gratifications of pleaſure to the mind.

Though every one has not ground to form *plantations* of any conſiderable extent, yet if it were only a ſingle tree here and there, i. e. to do what little *might* be in this way, it would ſhew a worthy ſpirit, and make a man an honourable benefactor to ſociety. *Corners* of fields might have little clumps conveniently planted, without much expence of fencing. A few trees might be planted in, or rather juſt without, *hedge rows;* but theſe ſhould be chiefly *oaks*. It is a practice with ſome, to plant trees in hedges when firſt made; but they are commonly too ſmall, and ſo the quick choaks them, and they never thrive.

But the planting of *foreſt trees* is *profitable* as well as pleaſing and reſpectable; and a young planter may live to *reap* much reward from his labour, or he may leave a valuable inheritance to his children. "The plantation

plantation and care of timber is like buying the reverſion of an eſtate—for a little money expended, we become heirs to great ſums.—In countries ſcarce of firing, and where poles and rails are wanted, *underwood* will pay the proprietor triple more value than the beſt fields of corn, and the *oaks* among it remain a great eſtate to ſucceeding generations." *Poor* land, that does not anſwer for *corn*, would be profitably cultivated in *wood*; but ſuch ground ſhould be *ſown*, rather than planted. Wet places may be advantageouſly planted with the amphibious tribe, as *willow*, *ſallow*, *withy*, *oſier*, &c.

For thoſe who may be diſpoſed to plant *foreſt trees*, the following directions are offered:—The *manual* work proper to this buſineſs, may be gathered from what has been already ſaid on planting *fruit trees* and *ſhrubs*; and though plantations of *foreſt trees* need not be ſo nicely attended to as fruit trees, yet the *better* the work is performed, the fairer is the proſpect in growing *good timber:* a *check* by an error at firſt planting is a loſs of time, and a damage done to trees which is ſometimes never recovered. To give an inſtance:—the mould is often thrown on the roots of a foreſt tree in *lumps*, when if a little *ſifted* earth were uſed, ſo as juſt to cover them with fine mould, the trouble would be amply repaid by the quick ſtriking, and future ſtrength of the tree.

Ground *deſigned* for planting ſhould be *prepared* as long as it can beforehand, by the uſe of the plough or ſpade; and if ſome ſort of previous cultivation, either in *corn* or *vegetables*, were adopted, the ſoil would be better fitted to receive the trees. At any rate, the places where the trees are to be ſet, ſhould be previouſly dug ſomewhat deep, and cleared of rubbiſh, perennial weeds, twitch, &c. If wet, let it be properly drained, for none but *aquatics* can do well in a cold and very moiſt ſoil.

In

In *open* planting for timber, to make only the holes good where the trees are ſet, is ſufficient, if the ſoil is not ſtrong, (which generally ſpeaking however it ſhould be,) and in ſuch plantations the plough being uſed for *corn*, or ſome ſort of crop to be carried off, the whole ſoil will be prepared for the trees' roots to ſpread. A plantation of this ſort may be conſtantly under the plough, till the trees ſhade too much, and then it may be ſown down for *graſs*, which laying warm, and coming early, would be found uſeful. The opportunity given to *improve* a ſoil by this cultivation, would inſure very fine timber.

But a *plantation* of trees being made (as ſuppoſe of *oaks)* at due diſtances, and the ground ploughed for two or three years, while they got a little a-head, then it might be *ſown* profitably, with nuts, keys and ſeeds for *underwood*, obſerving to thin the plants the ſecond year, and again the third, till two or three feet aſunder in poor ground, and to three or four feet diſtance if rich. In fourteen or fifteen years, (or much ſooner for ſome purpoſes), the *aſh poles*, &c. will be *fine*, and meet with a ready ſale as uſeful ſtuff: Afterwards the *underwood* will be fit to cut, in a ſtrong ſtate, every eleven or twelve years. In the management of underwood, ſome have thinned the plants while young, to three feet aſunder, and cut them down at three years, to about ſix inches, in order to form *ſtools*, which in about ten years are cut, having produced ſeveral ſtems from each. Some perſons have cut ſeedling trees down at this age to three inches for *timber*, leaving only one ſtrong ſhoot to grow from each ſtool; and thus finer trees are frequently (or rather certainly) produced, than from ſeedlings not cut down.

The *diſtances* of the timber plants, may be from twenty-five to thirty-five feet, according to the ſoil, or opinion of the planter. If no view to *underwood*, the above *open* planting may be made cloſe, by ſetting firſt the *principals* (which ſhould be fine plants) and then filling

filling up with others that are worſe, to within about eight or nine feet of one another. They will at this diſtance come to fair *timber*, or may be thinned at pleaſure; and even among theſe, a ſmall crop of *underwood* might be had which would ſhelter the timber plants, and help to draw them up ſtrait.

As to little plantations, of *thickets*, *coppices*, *clumps*, and *rows* of trees, they are to be ſet cloſe according to their *nature*, and the particular view the planter has, who will take care to conſider the uſual ſize they attain, and their *mode* of growth. An advantage at home for ſhade or ſhelter, and a more diſtant object of ſight, will make a difference. For ſome immediate advantage, *very* cloſe planting may take place, but good trees cannot be thus expected; yet if thinned *in time*, a ſtrait tall ſtem is thus procured, which afterwards is of great advantage.

For little *clumps*, or *groupes* of foreſt trees, (as elms) there may be planted three or four in a ſpot, within five or ſix feet of one another; and thus be eaſily fenced: having the air freely all round, and a good ſoil, ſuch clumps produce fine timber.

Single trees of every ſort, grow off apace, and are more beautiful than when in the neighbourhood of others, and particularly *firs*, *pines*, *larches*, *limes*, *walnuts* and *cheſnuts*: the *edible* fruited *cheſnut* is only good for timber; but the *horſe* is very ornamental, flouriſhing however only on high dry ground. As to *rows* of trees, whether ſingle or double, when planted for a *ſcreen*, they may be ſet about ſeven or eight feet aſunder, upon an average, according to their nature, taking care to prune them occaſionally, from too galling an interference.

Avenues are now ſeldom planted, but when they are, two good rows of *elms*, *limes*, *cheſnuts*, &c. ſhould be ſet at the width of the houſe, at full thirty feet diſtance in the rows: to thicken which, intermediate plants may be ſet; and alſo an inner row, to be removed when

when the principal trees are full grown. *Avenues* to proſpects, ſhould be fifty or ſixty feet wide.

The beſt ſeaſon for planting the *deciduous* kinds of foreſt trees, is the latter end of *October*, and *evergreen* ſorts, the latter end of *March;* though the ſoil, whether light and dry, or heavy and wet, ſhould ſomewhat direct; evergreen trees being to be planted generally with ſafety, early in autumn, if the ſoil is warm; but in all caſes trees ſhould be planted in *dry* weather, that the mould may be looſe to drop in, and lie cloſe between the roots, which is a *material* thing: Trees planted in rain or miſts, are injured by the moiſture moulding the roots.

Foreſt trees for planting are generally preferred rather large, and being ſo, ſhould not be taken up *idly*, but with as much of an uninjured ſpread of roots as poſſible: yet, free growing plants of about three or four feet high, promiſe in the *end* to make finer trees than thoſe that are planted larger. Some ſay they are beſt at this ſize from the *ſeed bed;* and others, to have been once planted out, having had their tap roots then cut, and generally ſpeaking, this is the caſe, as they have a more buſhy and horizontal root.

In the *act* of planting, let every thing be done as directed for fruit trees; i. e. the hole dug wide and deep, the ground well broken, or rather ſifted, to lay immediately about the roots, &c. Let the trees be made faſt by ſtakes, and litter laid about their roots to keep out froſt and drought. It is of much conſequence to take care that the roots (eſpecially of *evergreen* trees) do not get withered before planted. *Evergreens* do beſt in a dry, but *deciduous* foreſt trees (generally) in a moiſt ſoil, if it is not wet. *Oaks* in particular, though at firſt they may appear to do poorly, grow well in ſtrong moiſt ground, and make the beſt timber.

Fencing is the laſt thing to be conſidered. If trees are planted where cattle go, their ſtems muſt be protected from barking and rubbing. The common way

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of ſmall poſts and little rails is well known; but if large cattle are not fed where the trees are, good thorns ſtuck round them, and tied to them, is ſufficient, and indeed this might do in almoſt all caſes. There are *various* ways, ordinarily known, but whatever mode is uſed, let it be at firſt well executed, and afterwards repaired in time, as often as there is need. Something concerning the *raiſing* of foreſt trees will be found at page 78.

Whoever plants *foreſt trees*, ſhould take care to *dreſs* them by proper pruning, and ſuffering no ſuckers to remain about their roots. Their *tops* ſhould be kept equal, and not permitted to ſpread too much in heavy branches, but trained in a light and ſpiral way; always preſerving the leading ſhoot, to encourage *mounting*, which is the perfection of a foreſt tree. The *ſtems* of all trees deſigned for timber, ſhould be conſtantly, and *timely* attended to, as it is neceſſary to rub off buds, or to cut off the ſide ſhoots, except here and there a ſmall one, which may ſerve to detain the ſap to the ſwelling of the trunk; but branches being left on of any ſtrength, keep the tree from mounting, and draw it crooked, and ſuch branches, if cut off when large, occaſion knots, and ſometimes a decay at the part.

Plantations, growing thick, ſhould be *thinned* in time; but not too much at once, eſpecially in hilly ſituations; for as thoſe trees which remain, come ſuddenly to be expoſed, (after having been brought up under the ſhelter of others,) ſuffer much; getting crooked, ſtunted, and buſhy, inſtead of having their deſirable erect form, without which they are not adapted for ſuperior uſes, or agreeable to the eye.

Ornamental trees, as the *crab*, *black cherry*, *mountain aſh*, &c. may prove profitable, as well as agreeable, here and there one amongſt foreſt trees, and ſhould therefore not be omitted: The wood is good.

SECT.

SECTION XI.

OF RURAL AND EXTENSIVE GARDENING.

RURAL and extenſive gardening is naturally connected with a taſte for planting *foreſt trees;* and an idea of the *pictureſque* ſhould ever accompany the work of planting. Merely for the ſake of *objects* to gratify the *eye*, planting is very often purſued, and wherever trees can be introduced to improve a view from the *houſe*, or accuſtomed walks, *there* a man, having it in his power, as proprietor of the land, ought certainly to plant.

If to planting in *clumps*, *coppices*, *groves*, *avenues*, and *woods*, be added levelling of ground, improving of water courſes, and paſtures, making lawns, &c. the expence incurred would be *honourable*, and anſwered by pleaſures of the ſincereſt kind! There are ways of ſpending money, that *could* be named, which are found miſchievous in the extreme, and are therefore deſervedly branded with diſgrace; but he who diſtributes wealth into the hands of *induſtry*, working to uſeful purpoſes, and that delectable end of making the country about him a *garden*, does it in wiſdom.

Yet here ſome *caution* may be neceſſary. "Do nothing too much," is a wiſe maxim. Building, planting, and gardening, upon a *large* ſcale, have been ſometimes attended with *ſerious* conſequences, as when a man's fortune has not been equal to the undertaking.

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It were desirable to be able to persuade to great things in this way; but prudence must guide.

Those who would do much in *rural and extensive gardening*, should not be forward to trust their own taste altogether, though they may be ingenious. In this business there is no making *experiments*, but all should be executed, as much as possible, upon certainty. There are *professional* men in this way, whose peculiar practice, and appropriate talents, will enable *them* to conceive improvements, and the best manner of executing them, which would scarcaly be projected by any private person. There is a variety of works and decorations in extensive gardening which injudiciously introduced, might create a wasteful expence. This is an error that *ought* to be avoided, and most probably would be, by those who have been in the habit of studying nature, and the powers of art, as her submissive handmaid.

Artificial decorations are at this time much less made use of than formerly, and the grandeur of past times in the way of gardening would *now* be thought trifling and mean. Witness sheard trees, statues, vases, water works, figured parterres, &c. in that style of gardening, imitated from the *Dutch*, which has been long deemed a mere burlesque upon Nature, the grand characteristics of which are *ease* and *simplicity*.

The pleasure we seek in *laying out* gardens, is now justly founded upon the principles of *concealed art*, which appears like Nature; but still, whether ingenious contrivances and decorations, (altogether artificial,) should be so entirely laid aside as they are, may deserve to be considered. Gardens were formerly loaded with *statues*, and great improprieties were committed in placing them, as *Neptune*, in a grove, and *Vulcan* at a fountain, large figures in small gardens, and small in large, &c. but perhaps works of the statuary might still be introduced, and the meeting with *Flora*, *Ceres*, or *Pomona*, &c. well executed, and

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in proper places, could hardly give offence. A *terrace* as a boundary, is now ſeldom formed, but in *ſome* ſituations, ſuch an eminence however might in ſeveral reſpects be agreeable.

It would certainly be too much to attempt here particular directions for extenſive gardening. The *peculiar* capabilities of any place muſt ſuggeſt what may be done, and *much* judgment is neceſſary to plan aright. It is preſumed only to give a few *hints* to thoſe private perſons who would do ſomething in this way, which they may conſider as they pleaſe.

If trees are *planted* injudiciouſly, the error is a trifle; but if *cut down* ſo, the conſequence is ſerious, and has often been ſorely lamented; extirpation ſhould therefore be *well* thought of before it is executed; eſpecially trees about houſes, for many dwellings have been thus too haſtily expoſed, and deprived of comfortable ſhelter and ſhade. And why ſhould a taſte have prevailed for ſo *ſudden* a tranſition, as no ſooner out of the houſe than to arrive in the open country, or why ſhould an extenſive garden be thrown as much as poſſible into a *ſingle* view, when meeting with new objects in our walks is ſo agreeable?

Hilly ſpots that are in view of the houſe ſhould be planted with *firs*, as pleaſant noble looking trees, and very hardy. *Beech* does well on high ground, eſpecially, if chalky. In low ground, not to mention *alders* and that tribe, the *birch*, and even the *oak*, ſhould not be forgot, where the wet does not long ſtand.

About the houſe ſome *ſhady* walks ought always to be provided, by thick planting, if not of trees, yet of flowering ſhrubs, and *evergreens*, of which the *laurel* will be found the moſt uſeful. Here ſhould be alſo a good portion of graſs plat, or *lawn*, which ſo delights the eye when neatly kept, alſo borders of ſhewy *flowers*, which if backed by any kind of fence, it ſhould be hid with evergreens, or at leaſt with deciduous ſhrubs, that the ſcene may be as much as poſſible vivacious.

If there is good room, *ſingle* trees of the *fir* kind, at due diſtances, are admirable ornaments about a houſe, and clumps of ſhrubs all of the *ſame* kind have a good effect.

Thoſe who have *much* ſpace of ground to decorate, do well to plant trees and ſhrubs of *every* kind, as enlarging the ſources of amuſement, and affording opportunities for obſervation; but if the allotment of ground for this purpoſe is *contracted*, then, of courſe, thoſe *only* ſhould be planted, which by their neat foliage, natural ſymmetry, and gay flowers, may be truly eſteemed *ornamental*. They ſhould be ſuch as ſtrike the eye of perſons in *general* though they have nothing of ſingularity to engage the attention of the curious in plants. It too often happens, that good *old* ſorts of trees, ſhrubs, and flowers, are excluded for *new* ones, but if the latter are *not* more elegant, and generally pleaſing, the practice is ſurely not a wiſe one: in ornamental gardening, on a *ſmall* ſcale, great care ſhould be taken, in the choice of what is really pretty, that nothing dull or rambling be introduced.

In the moſt *ſheltered* place, near the houſe, there ſhould be an *incloſure* of a compact nature, as ſuppoſe of *yew*, *dwarf*, *elm*, or *hornbeam*, (rather the former) open only to the *South*, as a neceſſary apartment to place things in from the *greenhouſe*, or occaſionally the *hot-houſe*, tender *annuals*, or any hardy *curious* potted plants, for a ſummer reſidence. *Spruce firs* anſwer very well for a ſcreen, being kept clipt a little after Midſummer. For this purpoſe, or for *hedges* to ſeparate, or divide, any ſpot of ground, the *hop hornbeam* is better than the *common* ſort, which holds its dead leaves on all the *winter*, and makes a litter at *ſpring*. This buſineſs may alſo be eaſily effected by planting *elder* cuttings at a foot aſunder, which will grow up quickly, being kept moiſt.

The *walks* ſhould always be *wide*, ſome (in general) ſerpentine, and contrived as much as poſſible upon a *level*,

level, as walking up and down hills can hardly be called pleaſure. That they may be extenſive, they ſhould ſkirt the grounds, and ſeldom go acroſs them. In ſmall pleaſure grounds the *edges* of the walks ſhould be regularly planted with flowers, and long ones occaſionally ſo, or with the moſt dwarf ſhrubs; and neat ſheltered compartments of *flowers*, (every now and then to be met with) have a pretty effect. If the walks are extended to diſtant plantations of *foreſt trees*, every opportunity ſhould be taken, to introduce ſomethin of the herbaceous *flowery* kind, which will prove the more pleaſing, as found in unexpected ſituations: The outer walk of pleaſure grounds and plantations, ſhould every now and then break into open views of the country, and to parts of the internal ſpace, made pleaſing, if not ſtriking, by ſome work of art, or decoration of nature.

Water ſhould only be introduced where it will run itſelf *clear*, or may be eaſily kept ſo, as alſo in full ſight, and ſome *fall* of it ſhould be contrived, (if poſſible,) for the ſake of giving it motion and ſound, becauſe a lively ſcene of this element is always much more pleaſant than a dead one. Every *ſpring* of water ſhould be made the moſt of, and though *fountains*, &c. are out of faſhion, ſomething of this kind is agreeable enough. Near ſome pieces of *water*, as a cool retreat, it is deſirable that there ſhould be ſomething of the *ſummer-houſe* kind, and why not the ſimple ruſtic *arbour*, embowered with the *woodbine*, the *ſweetbriar*, the *jaſmine* and the *roſe*. Pole arbours are tied well together with bark or ozier twigs.

" Before the deſign of a rural and extenſive *garden* be put in execution, it ought to be conſidered, or anticipated, what it will be in twenty or thirty years time; for it often happens, that a deſign which looks handſome when it is firſt planted, and in good proportion, becomes ſo ſmall and ridiculous in proceſs of time, that there is a neceſſity either to alter it, or

deſtroy it entirely, and ſo plant it anew." This obſervation of Mr. *Miller's*, juſtifies the advice given of employing the moſt *ſkilful* in planning and directing pleaſure grounds. To proportion the breadth of walks, the ſize of carpets, caſting and levelling of grounds, parterres, &c. The diſpoſal of fountains, ſtatues, vaſes, dials, and other decorations of magnificence to moſt advantage, requires a *particular addreſs*, ſays Mr. *Evelyn*, or to ſpeak more emphatically, *a prophetic eye;* and though the taſte is not now what it was in Mr. *Evelyn*'s time, yet, perhaps, the only difference is that *more* ſkill is requiſite.

What has been ſaid of the *difficulty* of rural and extenſive gardening, is meant only as advice to proceed with cautious ſteps. The work is truly of the moſt worthy nature, and a taſte for it deſerves to be cheriſhed. Mr. *Shenſtone*, in an ode on *rural elegance*, defends his favourite employment thus:

And oh! the tranſport, moſt ally'd to ſong,
In ſome fair villa's peaceful bound,
To catch ſoft hints from Nature's tongue,
And bid Arcadia bloom around:
Whether we fringe the ſloping hill,
Or ſmoothe below the verdant mead;
Whether we break the falling rill,
Or through meandering mazes lead:
Or in the horrid bramble's room,
Bid careleſs groupes of roſes bloom:
Or let ſome ſhelter'd lake ſerene
Reflect flow'rs, woods, and ſpires, and brighten all the ſcene;
O ſweet diſpoſal of the rural hour!
O beauties never known to cloy!
While worth and genius haunt the favour'd bow'r,
And every *gentle* breaſt partakes the joy!
While *Charity* at eve ſurveys the ſwain,
Enabled by theſe toils to cheer
A train of helpleſs infants dear,

Speed

Speed whiſtling home acroſs the plain:
Sees vagrant *Luxury*, her hand-maid grown,
For half her graceleſs deeds atone,
And hails the bounteous work, and ranks it with her own.
Why brand theſe pleaſures with the name
Of ſoft, unſocial toils, of indolence and ſhame?
Search but the garden, or the wood,
Let yon admir'd carnation own,
Not *all* was meant for raiment or for food,
Not all for needful uſe alone;
There while the ſeeds of future bloſſoms dwell,
'Tis colour'd for the ſight, perfum'd to pleaſe the ſmell.

Why knows the nightingale to ſing?
Why flows the pine's nectarious juice?
Why ſhines with paint the linnet's wing?
For ſuſtenance alone? for uſe?
For preſervation? Every ſphere
Shall bid fair *Pleaſure's* rightful claim appear,
And ſure there ſeem of *human* kind,
Some born to ſhun the ſolemn ſtrife;
Some for *amuſive* taſks deſign'd,
To ſoothe the certain ills of life;
Grace its lone vales with many a budding roſe,
New founts of bliſs diſcloſe,
Call forth refreſhing ſhades, and decorate repoſe.

Mr. *Shenſtone* ſucceeded admirably in laying out his grounds, and producing a delightful ſcene about the *Leaſowes*. Several *gentlemen* have done great things in pictureſque gardening, without the aſſiſtance of profeſſional artiſts; but they have had a peculiar talent this way, improved by ſtudy and obſervation. Thus Mr. *Walpole* makes an eaſy affair of it, and ſays, "the poſſeſſor, if he has *any* taſte, is the beſt deſigner of his own grounds." And indeed, as they have come ſo frequently under his own eye and contemplation, he muſt, in a *great* meaſure, be competent to the work; and at leaſt, ought not to give up his judgment *too* implicitly to general undertakers of rural gardening.

Ornamental gardening depends much on the form of the *ground*, and therefore to ſhape *that* is the firſt object. Some ſituations may not need it, and, perhaps, a little alteration may produce a happy effect in others; therefore great alterations ſhould not be attempted without manifeſt advantages, as either levelling, or raiſing ground, is a heavier buſineſs than is commonly ſuppoſed, both as to time and expence.

Too much *plane* is to be guarded againſt, and when it abounds, the eye ſhould be relieved, by *clumps*, or ſome other agreeable object. *Hollows* are not eaſily filled, and *eminences*, moſtly are advantageous, in the formation of *pictureſque ſcenes*, in which the *general* principle of ornamental gardening conſiſts. This idea has been preſſed ſo far, that it is contended, a gardener ſhould be a ſtudier of landſcape paintings. But without an immediate view to pictures, no doubt, grounds may be laid out in a way ſufficiently pictureſque. That view may be very agreeable in Nature, which would not be ſo in a picture, and *vice verſa*.

Pictureſque gardening is effected by a number of means, which a true rural genius, and the ſtudy of examples only can produce. Theſe examples may be *pictures*, but the better inſtructors will be ſcenes in *Nature;* and the proper grouping of trees, according to their mode of growth, ſhades of green, and appearance in autumn will effect a great deal.

To plant *pictureſquely* a knowledge of the *characteriſtic* differences of trees and ſhrubs, is evidently a principal qualification. Some trees ſpread their branches wide, others grow ſpiral, and ſome conical; ſome have a cloſe foliage, others an open one, and ſome form regular, others irregular heads, the branches and leaves of which may grow erect, level, or pendent.

The *mode* of growth in trees, as quick or ſlow, the time of leafing, and ſhedding leaf, with the colour of the bark, are all circumſtances of conſideration in order to

to produce ſtriking contraſts, and happy aſſemblages, in the way of ornamental gardening.

" To *range* the ſhrubs and ſmall trees, ſo that they mutually ſet off the beauties, and conceal the blemiſhes, of each other; to aim at no effects which depend on a nicety for their ſucceſs, and which the ſoil, the expoſure, or the ſeaſon of the day, may deſtroy; to attend more to the groupes than to the individuals; and to conſider the whole as a plantation, not as a collection of plants; are the beſt general rules which can be given concerning them.

" In conſidering the ſubjects of gardening, ground and wood firſt preſent themſelves; *water* is the next; which, though not abſolutely neceſſary to a beautiful compoſition, yet occurs ſo often, and is ſo capital a feature, that it is always regretted when wanting; and no large place can be ſuppoſed, a little ſpot can hardly be imagined, in which it may not be agreeable. It accommodates itſelf to every ſituation, is the moſt intereſting object in a landſcape, and the happieſt circumſtance in a retired receſs; captivates the eye at a diſtance, invites approach, and is delightful when near: it refreſhes an open expoſure; it animates a ſhade, cheers the drearineſs of a waſte, and enriches the moſt crowed view. In form, in ſtyle, and in extent, it may be made equal to the greateſt compoſitions, or adapted to the leaſt: it may ſpread in a calm expanſe to ſoothe the tranquillity of a ſpaceful ſcene; or hurrying along a devious courſe, add ſplendour to a gay, and extravagance to a romantic ſituation. So various are the characters which *water* can aſſume, that there is ſcarcely an idea in which it may not concur, or an impreſſion which it cannot enforce."

On the works of *art* in gardening, the following paſſage is pertinent: — " *Art* was carried to exceſs, when ground, wood, and water, were reduced to mathematical figure, and ſimilarity and order were pre-

ferred to freedom and variety. Theſe miſchiefs, however, were occaſioned, not by the uſe, but the perverſion of art; it excluded, inſtead of improving upon nature, and thereby deſtroyed the very end it was called in to promote. Architecture requires ſymmetry, the objects of nature freedom; and the properties of the one cannot, with juſtice, be transferred to the other. But if, by the term *art* no more is meant than merely *deſign*, the diſpute is at an end; choice, arrangement, compoſition, improvement, and preſervation, are ſo many ſymptoms of *art*, which may occaſionally appear in ſeveral parts of a garden, but ought to be diſplayed without reſerve near the *houſe:* nothing there ſhould ſeem neglected; it is a ſcene of the moſt cultivated nature: it ought to be enriched, it ought to be adorned; and deſign may be avowed in the plan, and expence in the execution. Even regularity is not excluded: a capital ſtructure may extend its influence beyond its walls; but this power ſhould be exerciſed only over its immediate appendages. Works of *ſculpture* are not, like buildings, objects familiar in ſcenes of cultivated nature; but vaſes, ſtatues, and termini, are uſual appendages to a conſiderable edifice: as ſuch, they may attend the manſion, and treſpaſs a little upon the garden, provided they are not carried ſo far into it as to loſe their connection with the ſtructure."

SECT.

SECTION XII.

OF PRUNING.

1. OF WALL TREES.

OF this "maſter work of gardening," it has been ſaid, "that gentlemen prune too little, and gardeners too much;" theſe extremes are to be avoided, as attended with peculiar evils, equally miſchievous: *Wall-trees* are preſently ſpoiled by either practice. If they are too full of wood, the ſhoots and fruits cannot be properly ripened, and if they are too thin, the conſequence of the cutting that has made them ſo, is the production of wood, rather than fruit, *forcing* out ſhoots, where otherwiſe bloſſom buds would have been formed. The deſignation of trees to a *wall* neceſſarily occaſions cutting, and on the *ſkilful* uſe of the knife much depends; but let not the ingenious young gardener be diſcouraged at the appearance of difficulty: a little ſtudy, practice, and perſeverance will clear the way, and if he does not become a *complete* pruner at once, he will in a reaſonable time, and the work will prove one of the pleaſanteſt amuſements of a garden, not attended with fatigue.

Every one who has wall-trees cannot keep a *profeſſed* gardener, nor is every one who *calls* himſelf ſo, qualified to prune properly. It is a great mortification to a man, who wiſhes to ſee his trees in order, not to

be able to get an operator to attend them; let him resolve to learn the art *himself*, and the ability will be very gratifying to him.

Proud of his well-spread walls, he views his trees
That meet (no barren interval between,)
With pleasure more than ev'n their fruits afford,
Which, save himself who trains them, none can feel.

COWPER.

As many words must be used on this article *pruning*, for the sake of a little *order*, and the appearing less tedious, the business of managing *wall-trees* may be thus divided: — 1. Concerning the FORM. 2. The HEALTH. 3. The FRUITFULNESS of them. A tree may be kept in good *form*, but be neither *healthy* nor *fruitful*, and may be both in good form and health, yet not fruitful; but if it is fruitful, it must possess both the former qualifications.

1. As to the FORM, or general appearances of the wall-trees. If a tree is young and newly planted, the first thing is to *head* it down, by cutting off (if it is a *nectarine*, *peach*, or *apricot*) all the shoots, and the stem itself, down to a few eyes, that the lower part of the wall may be furnished with new and strong wood. Make the cut sloping; and behind the tree, taking care (by placing the foot on the root, and the left hand on the stem) not to disturb the tree by the pull of the knife. Plaister the part with a bit of cow-dung, clay, or stiff earth.

The *heading down* is to be made so as to leave two or three eyes, or four, if a high wall, on each *side* of the stem, from which shoots will come properly placed for training. The number of eyes may be also according to the strength of the tree, and its roots. If there are not two well placed eyes on each side of the stem, two *shoots*, thus situated, may be left cutting them short to

two or three eyes each. Eyes or ſhoots behind, or before, conſider as of no uſe, and let them be early diſplaced by rubbing, or cutting. This work is to be performed in ſpring, when the tree is putting forth ſhoots; i. e. about the beginning of *April*.

If towards the end of *May*, there ſhould be wanting ſhoots on either ſide the tree, having, perhaps, only one put forth where two were expected, *that* one ſhoot ſhould be cut, or pinched down, to two or three eyes; and before ſummer is over there will be found good ſhoots from them, and thus a proper head be obtained. This work of ſhortening ſhoots of the year may be done any time before *Midſummer*; but in this caſe, all ill-placed, or ſuperfluous growths, muſt be rubbed off *as* ſoon as ſeen, that thoſe to be reſerved may be the ſtronger, receiving more nouriſhment.

As the *lateral* ſhoots grow, let them be *timely* nailed to the wall, cloſe, ſtrait, and equi-diſtant; but uſe no *force* while they are tender. If they are quite *well* placed, they will need no bending; but ſometimes ſhoots muſt be laid in which are not perfectly ſo. Lay in as many good *moderate* ſized ſhoots as may be throughout the ſummer, for choice at winter pruning, yet do not *crowd* the tree. As the ſhoots proceed in length, nail them to the wall, that no material dangling of them be ſeen; but avoid uſing too many ſhreds.

In the *formation* of a tree, keep each ſide as nearly as can be *equal* in wood, and the ſhoots inclining downwards, which is a mode of training neceſſary to fill the lower part of the wall, (none of which ſhould be loſt) and to check the *too* free motion of the ſap, which wall trees are liable to from their warm ſituation, and continual cutting. All the branches ſhould have an *horizontal* tendency, though the upper cannot have it ſo much as the lower ones. Thoſe that are *perpendicular*, or nearly ſo, mount the wall too faſt, and run away with the food that ſhould paſs to the horizontals, which being impoveriſhed by the vigorous *middle* branches, gradually

become too weak to extend themſelves, and nouriſh the fruit. The pruner, therefore, muſt be content to have ſome of the wall, over the middle of the tree, unoccupied; or, at leaſt, ſuffer none but *weak*, or very moderate ſhoots, to find a place there.

The *idea* of a well-formed tree is ſomewhat repreſented by the ribs of a ſpread *fan*, or the *fingers* of the hand extended. Regularity is allowed to be ſo neceſſary to the *beauty* of a wall tree, that ſome have even drawn lines for a guide to train by; but Nature, (ever free and eaſy) will not ſubmit to ſo much formality, and ſuch a perfect diſpoſition of the branches are not neceſſary. A tree may be regular, without being linear, and the proper uſeful ſhoots are not to be ſacrificed to a fanciful preciſion. Though *croſſing* of branches is againſt rule, yet caſes *may* happen (as in want of wood or fruit) where even this awkwardneſs may be permitted. The object is *fruit*, and to obtain this end, form muſt ſometimes give place. "Barrenneſs being the greateſt defect, croſſing muſt not be ſcrupled, when barrenneſs cannot otherwiſe be avoided." A tree may be in fair ſymmetry, and yet badly pruned; and thus ſome ignorantly, and others cunningly, put trees in *order* without a proper *ſelection* of branches, ſo that the beſt ſhall be cut out, and the worſt left, merely becauſe the latter ſuits the form better, and gives a favourable appearance to the work as regular.

All *fore-right* and *back* ſhoots, and other uſeleſs wood, ſhould be diſplaced in time, for they exhauſt the ſtrength of the tree to no purpoſe, and occaſion a rude appearance. It is a very expeditious method to diſplace ſuperfluous young ſhoots, by puſhing, or *breaking* them off; but when they get *woody*, it is apt to tear the bark, and, in this caſe, the knife muſt be uſed: the better way is to *dis-bud* by rubbing; yet a young *luxuriant* tree ſhould be ſuffered to grow a *little* wild to ſpend the ſap. There is one evil, however, attending on dis-budding, and rubbing off young *fore-*

rights,

rights, that ſome *fruit ſpurs* are thus loſt; for *apricots* are apt to bear on little ſhort ſhoots, of from half an inch to an inch, (or more) and there are *peaches* which do the ſame; ſo that it is a rule with ſome pruners to wait to diſtinguiſh *ſpurs* from *ſhoots*, and then to uſe the knife; yet uſe it as little as may be in ſummer.

In *regulating* a tree, at any time, begin at the bottom and middle, and work the way orderly upward and outward. Never *ſhorten* in *ſummer*, (which would produce freſh ſhoots) except a forward ſhoot where wood may be wanting; but where the tree is really too thick, cut *clean* out what may be ſpared. None of the ſhoots produced *after* Midſummer ſhould be nailed in, except where wood is wanting to fill a naked place: They never bear fruit.

The proper uſe of *nails* and *ſhreds* is neceſſary to the beauty of the tree, as well as a regular diſpoſition of the branches; and in this buſineſs ingenuity will evidence itſelf in neatneſs.

Nails that are weak and ſmall can hardly be uſed, for they muſt be of ſufficient ſtrength to hold *faſt*; but large nails do not look well, and hurt the wall more than ſmaller. There is, however, a ſort made on purpoſe for this work, with flat heads, and robuſt ſhanks, called *garden nails*, and theſe are generally to be uſed; there is yet a ſmaller ſort, with flat heads, that, in many caſes, might do, and they have ſomewhat the advantage in *neatneſs*. In default of theſe there are *lath* nails, of two or three ſizes, that may be brought into uſe. It is proper to have two ſizes, the larger for ſtrong and the ſmaller for weak ſhoots: trees trained to *wood* can hardly have nails too ſmall.

Shreds ſhould be adapted to the ſtrength of the branches, and the diſtance of the buds from each other; ſo that with ſtrong ſhoots, having their buds wide, ſuch broad ſhreds may be uſed, that would make weak ſhoots unſightly, and ſpoil them by covering the buds; many a well cut tree has been made diſguſting, merely

merely by irregular and dangling ſhreds. An uniformity of *colour* can hardly be accompliſhed, but a regularity of ſize may; ſcarlet, if all alike, looks beſt; and white the worſt. The general *width* of ſhreds ſhould be from half an inch to three quarters, and the *length* two inches to three, having ſome wider, longer, and ſtronger, for large branches. In the *diſpoſition* of ſhreds, ſome muſt have their ends turned downwards, and ſome upwards, as beſt ſuits, for bringing the ſhoots to their proper place, and ſtrait direction. Though ſome pruners obſerve a ſort of alternate order, yet the ends hanging chiefly down, will look beſt. Uſe no more ſhreds and nails than neceſſary to make good work, as the effect is both rude and injurious.

The *hammer* uſed in nailing branches ſhould be neat and light, with a perfectly ſmooth and level face, about two thirds of an inch diameter, having a claw for drawing nails. As nails are apt to break out pieces of the wall in drawing, it is a good way to give the nail a tap to drive it a little, which looſening it from its ruſt, makes it come out eaſier, and ſo ſaves a wall from large holes, which is a material thing.

Trelliſes have been recommended to be placed againſt walls, as a means of keeping a wall ſound, and giving the fruit more room to ſwell. In the training of fruit trees that do not require the greateſt degree of ſun, and in ſituations where the loſs of a little heat is not material, this method of training trees is a good one. But, perhaps, there are not many ſituations in *England*, (common as it is on the continent) where this mode of culture can be adopted, as all the ſun we meet with here, is generally but barely ſufficient for *peaches*, *nectarines*, *grapes*, and *figs*. *Apricots*, however, may do, and when trained upon a *trellis*, in a *ſouthern* aſpect, grow finer, and are leſs mealy than directly againſt a wall. A durable, neat, and almoſt inviſible trelly might be made of wine.

Trelliſes

Trelliſes ſhould be made of ſeaſoned *deal*, and ſquared to ſlips of three-fourths of an inch, or a trifle wider, and fixed cloſe to the wall, ſo as to form upright oblongs of twelve inches by ſix. In this way of training, the ſhreds ought to be finer, and the nails much ſmaller; but the branches may be *tied* with *baſs*, &c. if the *trellis* is ſet a little from the wall, as ſuppoſe an inch.

It may be obſerved, that *tying* ſaves the expence of nails and ſhreds, cloſe ſet buds are never covered, and damage from the hammer is avoided. By trelliſing, a tree will be cleaner and leſs infeſted with vermin, which breed in the holes made by nailing. In this mode of training, the fruit ſwells freely, grows larger, and is of more equal flavour; ſo that it deſerves trial where it is likely to ſucceed by fine ſituations.

Let the young gardener be adviſed *reſolutely* to obſerve the pruning *laws*, and keep all in perpetual order, for his trees will run preſently to confuſion and ruin, if inattention and neglect take place.

2. The HEALTH of wall trees is greatly provided for, by obſerving the directions already given, concerning their *form;* for if obſerved, each ſhoot will have the proper benefit of *ſun* and *air*, to concoct its juices and prepare it for fruiting.

It injures a tender ſhoot when it preſſes hard againſt a *nail*. If the *hammer* ſtrikes a ſhoot, and bruiſes the bark, it often ſpoils if not kills it, by the part cankering. The *ſhreds* may be too tight, ſo that the ſhoot cannot properly ſwell; and if ſhreds are too broad, and too numerous, they are apt to occaſion ſickneſs, and prove a harbour for inſects and filth: Let the number be leſſened at all opportunities. A ſlip of the *knife* may wound a neighbouring branch, and make it gum, canker, or die. It will require care, and ſome practice, to avoid this accident; and in order to it, keep the point of the knife ſharp, and mind the poſition of it when cutting.

cutting. Cut close and sloping behind the eye; neither so near as to injure it, nor so wide as to leave a stub.

Digging deep with a spade about borders sometimes injures the roots, and keeps them too low in the ground, when they should be encouraged to run higher; and as nothing but well consumed dung, or other manure that drops freely, should be used about fruit trees, it is a good way to dig, or stir the ground carefully with an *asparagus fork*. Wounds and bruises hurt roots, as much as branches, and though cutting small roots asunder by a spade, does good rather than harm, yet large ones are often much injured by this instrument.

The *extremities* of a tree will not be in vigour without a strict attention to the *middle*, that it have no strong wood, growing erectly: this was before directed, and *must* be observed. When the sides of a tree are well extended, and full of healthy wood, then some shoots of *moderate* substance may be trained up the middle.

The *bending* of a branch much is a violence to be avoided; so that every shoot should be kept from the *first* in the direction it is to grow.

Luxuriant wood must be particularly attended to, to get rid of it in time, before it has robbed the weaker branches too much. *That* is luxuriant wood, which, according to the *general habit* of the tree, is much larger than the rest; for a shoot that is deemed luxuriant in one tree, may not be so in another. If strong wood, that is not very luxuriant, happens to be at the bottom of the tree, so that it can be trained quite horizontally, it may often be used to good purpose, as this position checks the sap. A luxuriant shoot may be kept in summer where it is not designed to retain it, merely to cut it down at *winter* pruning to two or three eyes, for getting wood where wanted the next year; or this shortening may take place in *June*, to have new shoots the present year. Luxuriant shoots may be sometimes retained for a time, merely as *waste pipes*.

More

More concerning luxuriant wood will be found in what follows.

All *diſeaſed*, damaged, very weak, or worn out branches (as they occur) ſhould be cut out, to make way for better; but if a tree is *generally* diſeaſed, ſome caution muſt be uſed not to cut out too much at once, if there is any hope of reſtoring it. A very old tree, or a young one, that does not thrive, may be cut a great deal; but prune it ſo as to have a general ſprinkling of the beſt of the branches, and keep ſhort lengths of an eye or two, of the weaker ones, in a ſort of alternate order.

Young trees are very apt to decline, and ſometimes die, if ſuffered to overbear themſelves the firſt year or two of fruiting: The remedy is obvious, and ſhould reſolutely be applied.

A *weak* tree is helped much by training it more *erectly* than uſual, as leſs check is thus given to the ſap, and ſo the ſhoots are more likely to ſwell: ſuch a tree ſhould be kept *thin* of branches, and always pruned *early* in autumn, keeping the top free from ſuch wood as is ſtronger than that which is in general below, and all the ſhoots ſhorter than uſual.

Old decaying trees ſhould be leſſened a little every year, and conſtantly watched, to obſerve where young and ſtrong ſhoots are putting out below, in order to cut down *to* them; and though the time for doing this is commonly at autumn or winter pruning, yet it may be beſt done in ſummer, as the ſhoots would thrive the better; obſerving to put ſome graffing clay, or cow dung, to the part, to prevent gumming, which ſummer pruning is apt to occaſion. A judicious pruner may bring the oldeſt, and moſt ill-conditioned tree, to a healthy and bearing ſtate, if all is but right at the root, it having a good ſoil about it.

Keep all wall trees *clean*, and particularly weak ones, from moſs, cobwebs, or other filth; and attend to inſects, ſnails, caterpillars, and ſmother flies. Any *bark* that

that is decayed by cracks, &c. muſt be cleared away to the quick, either by rubbing, or the knife, as filth and inſects are apt particularly to gather there: wipe the part clean, with ſpunge and ſoap.

Conſider the *ſoil* about an unthrifty tree, and if it is thought bad, improve it by moving away as much of the old as conveniently can be done. The roots may be laid carefully quite bare, and examined, in order to cut off decayed or cankered parts, and to apply immediately to them ſome fine and good *freſh* earth, with a *little* thorough rotten dung in it, and a ſprinkling of ſoot, or wood aſhes.

Hog dung, applied freſh, is ſaid to have a peculiar efficacy in recovering weak trees; and *cow dung* may reaſonably be expected to do good, if the ſoil is a warm, or hungry one, and if not ſo, the hog dung is not ſo proper, as it is a cold dreſſing. If the ſoil is a ſtrong one, a *compoſt* of *fowls*, or *ſheep's dung*, *lime*, with any freſh light *earth*, one part of each of the former, and three of the latter, mixed with the ſoil that is taken off, will be a proper manure; to which a little ſharp ſand may be added. An *animal* dreſſing, as of entrails, or any carrion, or bullock's or hog's blood, applied to the roots, has been frequently found effectual to make fruitful, and to recover decaying trees, and in particular vines. All theſe applications ſhould be made late in *autumn*, or early in ſpring.

The *conſtitution* of a tree is ſometimes naturally *barren;* or the ſoil that the roots have got into may be ſo nought and *deleterious*, that no pains, or perſeverance, will avail any thing; but continuing fruitleſs and ſickly, admoniſhes the owner to take it up, and try another plant, rectifying the ſoil thoroughly, if the evil is thought to ariſe there. The *ſmother fly* does ſometimes repeatedly attack the ſame tree, which is a ſign of inherent weakneſs, for the juices of a ſickly tree are ſweeter than thoſe of a ſound one, and ſo more liable to ſuch attacks. Sometimes a tree of this kind, when removed

removed to a good ſoil, and pruned greatly down, does very well. A ſoil too rich of dung often occaſions trees to be blighted, and the remedy is to impoveriſh it with a ſharp ſand.

In order to *health* and *ſtrength*, a tree muſt not be kept too *full* during ſummer, as it prevents the proper ripening of the wood, and makes the ſhoots long jointed. If more than one ſhoot proceed from the ſame eye, reſerve only the ſtrongeſt and beſt ſituated. A crowded tree cannot be healthy, and it becomes both lodging and food for inſects. The *bloſſom buds* of a tree being always formed the *year before*, they will be few and weak in a thicket of leaves, as debarred of the neceſſary ſun and air: But in order to avoid an over-fulneſs, do not make any great amputations in ſummer, leſt the tree ſhould gum.

In clearing a tree of *ſuperabundant* wood, take care not to cut off the *leading* ſhoot of a branch. All ſhoots after *Midſummer* ſhould be diſplaced as they ariſe, except where wanted to fill up a *vacancy*. In a *too* vigorous tree, the Midſummer ſhoots may be left for a while on thoſe branches that are to be cut out at winter pruning, as cutting ſuch trees in ſummer is to be avoided as much as poſſible; ſo that a little rudeneſs in a luxuriant tree may be permitted as a neceſſary evil, provided it becomes not too ſhady, or unſightly. *Watering* wall trees with an *engine* ſmartly on a ſummer's evening, is conducive to their health, and frees them from inſects.

The ſubject of *blights* is too difficult, and uncertain, to be entered upon here, though it may ſeem a proper place for it.

3. The FRUITFULNESS of wall trees, (the ultimate object of planting and training them) comes now to be ſpoken of. Their proper *form* and *health* being good, the foundation is laid, but ſeveral things are yet to be done to obtain the *end* propoſed, and this chiefly

chiefly regards the principal cutting, or what is called *winter pruning*.

If trees have been planted far enough aſunder, it is a happy circumſtance, as the proper *horizontal form*, and the *open middle*, may be preſerved. The longer the horizontals are, the more neceſſary it is to be careful to ſuffer none but weak branches in the center uprightly. If trees are confined as to length of wall, they of courſe take a more erect form, but ſtill ſtrong wood ſhould not mount juſt in the middle.

If the trees have been properly attended to during *ſummer*, there will be now (at their principal, or *winter* pruning) the leſs to do; and the leading objects are, to *thin* and to *furniſh* them, or, in other words, to take out what is to ſpare, and to cut what is left, ſo as to fill the tree properly again by ſucceeding ſhoots.

A tree is to be *thinned* of damaged, unpromiſing, and ill-placed ſhoots, and of woody branches that are decaying, or reach far without fruitful ſhoots on them, and always *ſome* of the old wood ſhould be cut out, where there is young to follow, or ſupply its place. Of the fair and well placed ſhoots alſo, the ſuperabundance is to be taken away, ſo as generally to leave the *good* ones at four, five, or ſix inches aſunder, according to the ſize of the wood and fruit.

Luxuriant wood, i. e. thoſe ſhoots that are gigantic, muſt be taken out from the reſt, as they would impoveriſh the good, and deſtroy the weak branches, and are never fruitful; but if a tree is *generally* luxuriant, it muſt be borne with, and the leſs it is cut, comparatively ſpeaking, the better. Such a tree, after a few years, may come to bear well; and when it begins to ſhoot moderately, ſome of the biggeſt wood may be taken out each year, or ſhortened down to two or three eyes, and ſo brought into order. The more horizontally free ſhooting trees are trained the better, as the bending of the ſhoots checks the ſap. A ſtrong ſhoot or two,

two, of a very luxuriant tree, may be trained perpendicular for a time, to keep the horizontals the more moderate.

As the pruner is to begin below, and towards the *ſtem*, ſo the object in thinning muſt be, to prefer and to leave thoſe ſhoots that are placed *loweſt* on the branches, that ſo the tree may be furniſhed towards the center. See that thoſe left are ſound, and not too weak, or over ſtrong, for the moderate ſhoots generally bear beſt. Weak ſhoots are always more fruitful than ſtrong ones; and if they are furniſhed with fair bloſſoms, ſhould be kept where a tree is full of wood, and even preferred to moderate ones, on a very flouriſhing tree.

In this *thinning* buſineſs, the young pruner muſt be content to go on *deliberately*, that he may conſider well before the knife is applied. To make a proper *choice* is the *great* point. After heſitating, to be ſometimes at a loſs, muſt not diſcourage a learner, for good pruners often are, and no two adepts would chuſe juſt the ſame ſhoots for reſerve.

The next object is to *furniſh* a tree. In order to this, the thinning of old wood, young being ready (or eaſily to be procured) to follow, has already been mentioned; but the principal ſtep is the *ſhortening* of the ſhoots, which occaſions them to throw out below the cut, for *future* uſe. If they were not to be ſhortened, the tree would preſently extend a great way, bearing chiefly at the extremities, and all over the middle it would be very thin of fruit, and thus a great part of the wall loſt; which not to ſuffer, is the art of a pruner that ſhews he has indeed ſkill.

The *mode* of bearing in peaches, nectarines, and apricots, is on the laſt year's wood, which makes it neceſſary to *ſhorten*, in order to a certain ſupply of ſhoots for bearing the next year; and thus to have *ſucceſſion* wood in every part of the tree.

The rule for *ſhortening* is this: Conſider the ſtrength of the tree, and the more vigorous the ſhoots are, cut off

off the leſs. If a luxuriant tree were to have its ſhoots much ſhortened, it would throw out nothing but wood; and if a weak tree were not pretty much cut, it would not have ſtrength to bear. From vigorous ſhoots one-fourth may be cut off; from middling ones, one-third; and from weak ones one half.

In ſhortening, make the cut at a leading ſhoot bud, which is known by having a *bloſſom bud* on the ſide of it, or, which is better, one on each ſide. *Bloſſom buds* are rounder and fuller than leaf buds, and are diſcernible even at the fall of the leaf, and plainly ſeen early in the ſpring. It is deſirable to make the cut at *twin bloſſoms*, yet as this cannot always be done, the due proportion of *length* muſt generally determine. It often happens, that the bloſſom buds are chiefly, and ſometimes all, at the end of the ſhoot; but ſtill it ſhould be ſhortened, if it is at all long. Never cut where there is *only* a bloſſom bud, and prefer thoſe ſhoots that are ſhorteſt jointed, and have the bloſſoms moſt in the middle. The ſhoots that lie well, and are fruitful, or healthy, and but a few inches long, may be left *whole*. Always contrive to have a *good* leader at the end of every principal branch.

Young trees (as of the firſt year of branching) ſhould have the lower ſhoots left longer in proportion, and the upper ſhorter, in order to form the tree better to the filling of the wall: the lower ſhoots may have three or four eyes more than the upper.

In *furniſhing* a tree, conſider where it *wants* wood, and cut the neareſt unbearing branch (or if neceſſary, a bearing one), down to one, two, or more eyes, according to the number of ſhoots deſired, for in ſuch cloſe ſhortening, a ſhoot will come from each eye. With a view to wood for filling up a naked place, a ſhoot formed after *Midſummer* may be thus ſhortened; though the general rule is, to diſplace *all* ſuch late ſhoots as uſeleſs; the dependence for bloſſoms being on the early formed ſhoots.

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The *time* for the principal, or *winter* pruning, is by ſome gardeners held indifferent, if the weather is mild at the time; but a moderate winter's day is often quickly followed by a ſevere froſt, which may hurt the eye and bloſſom next the cut. The beſt time is at the fall of the leaf, and ſhould take place as ſoon as the leaves *begin* to fall. *November* is, generally ſpeaking, a good time, and if this month is paſt, then *February*, if it is mild, or as ſoon after as poſſible, for when the bloſſom buds get ſwelled, they are apt to be knocked off by a little touch, or jar of the hammer.

An *autumn* pruning will make the tree ſtronger, and the bloſſoms come bolder and forwarder; and if trees are then cut, as it leſſens the work of *ſpring* much, this alone is a good argument for it. This practice gives alſo a better opportunity to crop the borders (moderately) with *cauliflowers*, *lettuces*, *radiſhes*, &c. to ſtand the winter. Pruners in general, however, like a *ſpring* cutting, becauſe they then ſee the bloſſoms plainly, and thus more readily make their election of ſhoots. Yet if the firſt fine weather and leiſure were embraced in *autumn*, it were certainly better; and ſurely it muſt give ſatisfaction to ſee the trees in *order* all the winter.

But though an *autumn* pruning is to be earneſtly recommended, it were beſt to leave *young* trees, for a year or two, after heading down till *ſpring*; and *luxuriant* trees ought certainly to be ſo left, not only to check the ſtrength of the coming ſhoots, but to ſee better where their bloſſoms are, that no fruit be loſt, as when in this ſtate they bear but idly.

In an *autumn* pruning, *apricots* ſhould be cut laſt; but if *ſpring* be the time, the rule is to begin with *apricots*, then *peaches*, and then *nectarines*. *Apricots* ſhould not be ſo much ſhortened as peaches, nor do they ſo well endure the knife. Shoots of the *apricot*, if under a foot, may be left uncut, if there is room. The *ſpurs* of apricots ſhould be ſpared, if not too long, or

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numerous, for they bear well, and continue for years. Some ſorts of *peaches* are alſo apt to put out fruit *ſpurs*, and muſt be managed accordingly.

If much *alteration* is to be made in a wall tree, it will be neceſſary to un-nail a great part, if not the whole tree, or a ſide of it, at leaſt. When a tree has *filled its ſpace*, ſomething of this ſort *muſt* be done, and the worſt, oldeſt, largeſt, and moſt unprofitable wood taken out. If good fruitful wood be cut away to reduce the tree, then that is to be reſerved which will lay in ſtraiteſt and in the beſt form, branching out the neareſt towards the ſtem.

Thus having finiſhed the directions for pruning *apricots*, *peaches*, and *nectarines*, a few ſhort obſervations may be made, and ſomething ſaid concerning the *management* of thoſe wall trees, in order to obtain good *fruit*.

After trees have been pruned, it will be proper to look them over, to ſee what can be amended, as they will hardly be done *perfectly* at firſt; this buſineſs may be let alone till *bloſſoming* time, and then ſome judicious alterations may perhaps be made, (with care) as taking out ſome weak, or other ſhoots, that prove *barren*, and may be ſpared, or cutting ſome down to the knit-fruit, both to benefit that, and make room for the new wood: *April* will be the time for this.

The *pruner's* buſineſs is not ſimply in providing a preſent, or a next year's crop of fruit, but to manage his trees ſo as to lay a *foundation* for years to come: He is to *anticipate* conſequences, and provide for the future.

Particular as the directions here given for pruning have been, they cannot have comprehended every *poſſible* caſe, but good ſenſe and experience will readily ſupply what may be wanting, if the inſtructions afforded are underſtood.

Thoſe who *hire* a workman to perform their pruning, ſhould have three *ſummer* operations beſides the *winter*;

i. e.

i. e. in *May*, *July*, and *September*, earlier or later in theſe months as the ſeaſon is, taking care to be ſatisfied of the *ſkill* of the performer.

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To *preſerve bloſſoms* from inclement weather, is a thing ſome perſons are curious in, though on the whole they may be (as they generally are) left to take their chance. After expence and trouble, this buſineſs is often done to no purpoſe, or a bad one. The covers ſometimes knock off the tender bloſſoms, and if the work is done irregularly, as perhaps covered too cloſe for a time, and then left uncovered, they are ſooner cut off.

Many contrivances for *ſhelters* have been uſed. The old way of ſticking cuttings of *yew*, or other *evergreens*, or *fern*, (which is beſt when dry) is as little trouble as any; but they ſhould be fixed carefully, ſo as not to ſlip, or be moved by wind, and not ſo thick as to ſhade overmuch. A ſlight covering is of ſervice, and rather to be recommended than a thick one.

Nothing more than an old *net* has been uſed ſucceſsfully by ſome gardeners for the purpoſe.

A *coping* projecting from ſix inches to a foot, according to the height of the wall, is ſerviceable, as keeping off heavy rains, and alſo froſts, whoſe action is perpendicular: This coping, when it is of *thatch*, though not ſo ſightly, is beſt: But *perpetual* covers, if wide, do harm by keeping off dew and gentle rains.

The *beſt* covering for the protection of *bloſſoms* is, perhaps, that which Mr. *Miller* recommends, "made with two leaves of ſlit-deal, joined over each other, and painted, fixed upon the top of the wall with pullies, to draw up and down at pleaſure, forming a ſort of penthouſe."

Reed or *ſtraw* hurdles have been uſed to place before the trees in ſevere weather; and if only ſet at right

angles againſt the wall, towards the *eaſt*, when the wind is ſtrong from that quarter, they do good: a long tree might have one ſet up againſt the middle of it, as well as at the *eaſt* end. *Hurdles*, covered with a mat, or cloth over them, do very well; and if too ſhort to reach the top of the wall, they may be ſet upon forked ſtakes faſt in the ground.

Poles fixed in the ground to the height of the wall, at ſmall diſtances, and ſix inches from it, might be covered with *mats*.

Whatever *covering* is uſed, it ſhould be left *no* longer on than neceſſary, and it ſhould be well ſecured from ſlipping or rubbing againſt the tree by wind. It ſhould not be uſed till the bloſſoms get a little forward, nor continued longer than while the fruit is well ſet, being *regularly* put up at night, and taken off in the day, except in very bad weather: Trees covered too long get ſickly.

The *thinning* of fruit, when too thick upon the tree, is a matter that muſt be attended to, for it will eventually prove loſs, and not gain, to leave too many for ripening. It weakens the tree, prevents the knitting of ſo many, or ſo ſtrong bloſſoms for the next year as are deſirable, and hinders the fruit from coming to its ſize and flavour. Do this work when the fruit is about the ſize of a horſe-bean.

The *rule* for thinning ſhould be, to leave no two fruits ſo cloſe as to ſwell one againſt another; except indeed the tree is generally ſhort of fruit, when twins may be left on ſtrong branches. Three or four, on a long and ſtrong branch, are quite enow, and ſo in proportion for weaker wood: this is ſaid of the larger ſorts of *peaches* and *nectarines*; *apricots* may, in general, be left ſomewhat thicker on a flouriſhing tree, and the leſſer kinds of peaches and apricots may ſtill be ſomewhat more numerous, as the early *maſculine apricot*, the *nutmeg peach*, and *nutmeg nectarine*: there may be more *nectarines* left on a tree than peaches.

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As the *apricots* gathered to thin a tree are uſed for *tarts*, ſo are ſometimes the *nectarines*, but let not too many of either grow for this uſe, or ſtay too long on the tree before they are gathered. Thin the more freely flouriſhing young trees, (to the third year) and weak old ones. Trees ſhould be thinned by *cutting* off the fruit with a ſharp pointed knife, and not by pulling, which may tear the bark, and, if joined (as in cluſters) to another fruit, the pulling off one, often damages the foot ſtalk of the other, and occaſions its dropping.

As to thinning the *leaves* of wall trees, too much liberty ſhould not be taken, though in ſome meaſure it may be neceſſary to give colour and ripeneſs to the fruit. Thinning away a few leaves, where thick, is ſerviceable to ripening the wood to form bloſſoms. When leaves are greatly multiplied, and ſhade the fruit much, a *few* at a time may be diſplaced, if the fruit is nearly full grown, but rather by pinching or cutting the leaves, juſt above the foot ſtalk, than by pulling.

In *gathering* wall fruit, do not pinch it to try if it is ripe, but give it a gentle lift, and if fit for eating, it will readily part from the foot ſtalk. Thoſe *peaches* and *nectarines* that drop by their ripeneſs are yet good (ſome ſay beſt) for the table; but *apricots* have a ſmarter and more agreeable flavour before they are thoroughly ripe.

As to the *dropping* of fruit when it has attained to ſome little ſize, in very light ſoils, it may be owing to drought, uſe watering therefore deep and wide. But the cauſe ſeems often to be ſome injury from inſects, or froſts, that the *embryo* fruit has ſuffered at the foot ſtalk, which can only ſuſtain its burthen for a while, and then its own weight breaks it off. See p. 51.

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Vines require frequent attention, as to pruning and training; but all will avail little, if they have not a

warm ſoil, and full ſun, or ſome accidental advantage, as being planted at the back of a warm chimney; and though they will grow and bear leaves any where, they will not fruit well in *England*, without a favourable ſeaſon, or hot ſummer.

Young new planted vines ſhould be pruned quite ſhort, for two or three years, that they may get ſtrong. If the plant has a weak root, not above *one* ſhoot ought to grow the firſt year, which ſhould be cut down in *autumn*, or to two or three eyes.

The beſt *time* for the principal, or winter pruning of vines, is beſt as ſoon as the fruit is off, or the leaves falling. *November* does very well, and if this month paſſes, *February* ſhould be adopted, rather than quite in the winter. Late in the ſpring they are apt to bleed by cutting, which greatly weakens them.

The *mode of bearing* in vines is only on ſhoots of the preſent year, proceeding from *year old wood*. The rule, therefore, at winter pruning is, to reſerve ſuch ſhoots of the year that are beſt ſituated as to room, for training of thoſe ſhoots that *are* to come from them, which will be almoſt one from every eye. Make choice of thoſe that are placed moſt towards the middle, or ſtem of the vine, that all the wall may be covered with bearing wood; and every year cut ſome *old* wood out that reaches far, to make room for younger to follow.

The *form* that a vine takes on the wall is various, and not very material, whether it be more horizontal, or perpendicular. The form muſt be governed according to the ſpace of walling allotted to it; ſometimes it has ample room, as at the gable end of a houſe, and ſometimes it is confined to a low wall, or between trees, windows, &c. The reſerved ſhoots ſhould be twelve or fifteen inches aſunder, if they are ſtrong, and weak ones may be ſomething leſs: hardly too much room can be allowed them.

The *ſhortening* of the ſhoots ſhould be according to their ſtrength and the ſpace there is for training thoſe ſhoots

ſhoots that *will* be produced, which always grow very long. If there is room, three, four, or five eyes may be left, but not more to any ſhoot, except it is deſirable to extend ſome ſhoot to a diſtance to fill up a particular ſpace, and then eight or nine eyes may be left, which being repeated again another year, and ſo on, a vine will ſoon reach far.

Sometimes vines are trained on low walls by a long *extended horizontal* branch, a few inches from the ground, as a *mother bearer*. Thoſe ſhoots that come from this horizontal are to be trained perpendicularly, and cut down to one or two eyes every year, that they may not encroach too faſt on the ſpace above them. If the *vine* is confined to a narrow but lofty ſpace, it is to be trained to an *extended perpendicular* mother bearer, having ſhort lateral ſhoots pruned down to a ſingle eye, or at moſt two. The management of vines requires *ſevere* cutting, that they may not be too full in the ſummer, for they put out a great deal of wood, and extend their ſhoots to a great length; and therefore the young pruner muſt reſolve to cut out enough.

An *alternate* mode of pruning vines is practiced by ſome, one ſhoot ſhort, and another long; i. e. one with two eyes, and another with four or five. Severe cutting does not hurt vines, and make them unfruitful as it does other trees; and therefore, where ſhort of room, they may be pruned down to a ſingle bud, as the caſe requires.

The *ſummer management* of vines muſt be carefully attended to. As ſoon as the young ſhoots can be nailed to the wall, let them not be neglected; but remember they are very tender, and will not bear much bending: train in only the well-placed ſhoots, rubbing or breaking off the others. The *embryo fruit* is ſoon ſeen in the boſom of the ſhoot, and thoſe thus furniſhed are of courſe to be laid in, as many as can be found room for, in preference to thoſe ſhoots that are barren, which nevertheleſs ſhould alſo be trained, if they are ſtrong and

well placed, and there is ſpace for them. Rub off all ſhoots from *old wood*, except any tolerable one that proceeds from a part where wood is wanting to fill up ſome vacant ſpace. If two ſhoots proceed from one eye, diſplace the weakeſt, or the outermoſt, if they are both alike, and the *fruit* ſhould not direct otherwiſe. *Vines* grow rapidly, and muſt be nailed to the wall, from time to time, as they proceed, that there may be no rude dangling, which would not only have a ſlovenly appearance, but in ſeveral reſpects be injurious.

The *ſtopping* of the ſhoots is to take place, both as to *time* and *meaſure*, according to the ſtrength and ſituation of them, or whether *fruitful* or *barren*. Thoſe *weak* ſhoots that have fruit, and are rather ill placed, or confined for room, may be ſtopped at the ſecond, or even firſt joint above the fruit, early in the ſummer; but thoſe ſhoots that are *ſtrong* and have room to grow, ſhould not be ſtopped till they are in flower, (in *July*) and at the third or fourth joint above the fruit. In ſhortening the ſhoots of the vine, do it about half an inch above an eye, ſloping behind a plump and ſound one. The *barren* ſhoots are to be trained at full length, and not ſtopped at all, if there is room for them, or, at leaſt, but a little ſhortened towards autumn, as in *Auguſt*, becauſe they would put out a number of uſeleſs and ſtrong ſide-ſhoots, if cut before.

The *ſide-ſhoots*, i. e. thoſe little ones put out by the eyes that are formed for next year, are commonly directed to be immediately diſplaced by rubbing off, as ſoon as they appear; and if the vine is large, and the ſhoots ſlender, it is very proper; but if otherwiſe, their being left to grow awhile (ſo as not to get *too* rude and crowding) is rather an advantage, in detaining the ſap from puſhing the ſhoots out immoderately long; and when theſe are taken off, the lower eye of each may be left with the ſame view. But the ſide ſhoot, that proceeds from the *top* of each ſhortened branch, ſhould be

be left on, and when it gets long, then ſhortened down to an eye or two.

In order to fruitfulneſs, vines will need *dreſſing* with ſome ſort of manure, for though they grow in vineyard countries on rocky hills, and in very ſhallow ſoils, and have done ſo on ſome chalky, hot, gravelly hills in *England*, yet ſome warm manure they muſt generally have applied, or they will produce little good fruit.

Some people are very fond of *expoſing* the fruit of the vine to the full ſun, by ſtripping off leaves; but this ſhould not be practiced till the bunches have attained their proper ſize, needing only to be ripened, and even then but *little* ſhould be done in this way: The loſs of *leaves* is an injury to every plant.

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Fig trees are beſt pruned early in *October*, (cutting the leaves off) but the more uſual time is early in *ſpring*, as after an *autumn* cutting (if late) they are apt to die down; but if not completely pruned at this time, let, at leaſt, ſtragglers be taken out, and the reſt laid in cloſe without ſtraining: Thus they will be more conveniently covered.

The *mode of bearing* in the fig is, that fruit chiefly comes the preſent year on the little ſhoots from wood of the *preceding*, and that towards the *ends* of the branches; which circumſtances dictate the rules for pruning: Two years old wood will bear ſome, but older wood never.

The ſhoots, during ſummer, are to be laid in at full length, plentifully, as room will permit. The weak, ill-placed, or ſuperabundant ones, cut clean out; yet rather break, or rub them off, in an early ſtate of growth, for cutting branches or ſhoots in ſummer is apt to make them bleed, as it is called; i. e. the ſap run; when cut in *autumn*, the fig will ſometimes bleed for a

day or ſo, but if late cut in *ſpring*, the oozing will continue perhaps a week.

At the *principal* pruning, the ſtrongeſt and the cloſeſt jointed ſhoots are to be preferred, and left about ſeven or eight inches aſunder, without ſhortening. Let the ſpare ſhoots be cut out cloſe and ſmooth, and *as* much of the *old wood* as may be; for the tree will increaſe too faſt, and get too naked of bearing wood in the middle, if this is not freely done; and the eſſential point in the management of fig tree is, (as indeed of all wall trees) to have *young* wood all over it, and particularly in the middle, and towards the bottom. Wood is ſeldom *wanted* in a fig tree, but where it is the *ſhortening* of a ſhoot, properly ſituated, (by taking off the leading bud, or cutting lower, as the caſe requires) is ſure to produce it: Do this in *April*, as the beſt time.

When hard *froſts* are expected, ſtrew ſome aſhes, and ſome litter, over the roots of fig trees. Mats ſhould be nailed over their branches, (firſt pulling off the figs) as the ſucculent nature of their wood makes them tender. Theſe coverings are to remain till the froſts are judged to be over, and then let them be covered up at night, and not by day, for a week or two, to harden them by degrees.

But *fig trees* will moſtly ſurvive hard winters, when in ſtandards, without covering; and though ſhoots trained to a wall are tenderer, yet *peaſehaulm* hung cloſe among the branches (at the approach of ſharp froſts) will preſerve them. This ſort of protection, as affording plenty of air, is by many good gardeners preferred to the more common practice of *matting*. But if *mats* were contrived to roll up and down, or kept a little diſtance from the tree, ſo as to give more or leſs air, as the weather is, the health and fruitfulneſs of the tree would be better inſured, for too cloſe (and as it commonly happens in conſequence too long) covering is injurious to both. Fig trees that have been cloſe covered

are

are often hurt by an early uncovering, and yet the ſpring air, as ſoon as poſſible, is deſirable.

It is worthy conſideration and trial, whether fig trees, againſt a good wall, would not do beſt on a *trellis*, as thus, if they have ſufficient heat, they would not be forced into wood, which they are apt to have too much of. In this way they might be protected in winter, by tucking in branches of evergreens, fern, &c.

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PEARS come next under our conſideration, as a few of the beſt ſorts are a good wall fruit.

A *young* pear tree, being planted againſt a wall in autumn, ſhould not be cut down till *ſpring*, when the head is to be reduced according to the goodneſs of the root, and ſo as to lay a proper foundation for covering the wall. If it has a *bad* root, all the ſhoots ſhould come off, and only the ſtem be left, with a few eyes to form new ſhoots, as was directed for *peaches*, &c. But generally ſome of the ſhoots are to be left, with due ſhortening, only taking it as a rule, that it is not proper to leave much wood on; but to prune down freely, in order to the putting out ſtrong ſhoots for parent branches. See *heading down*, under the directions for *eſpalier pruning*.

The *form* of pear trees is to be governed by the wall. If the ſpace allowed the tree is low and long, it muſt of courſe be trained perfectly *horizontal;* but if there is room above, and a deficiency of length, the form becomes more erect: Yet even in this caſe, the lower and more horizontal branches ſhould be allowed to get the ſtart a year or two, before the middle is permitted to fill, which ought not to have any over ſtrong wood, leſt it run away with the ſtrength of the tree, and keep the extremities weak. Train the *branches* at length, without ſhortening, and keep them at from ſix to eight inches diſtance, according to the ſize of the

fruit; remembering it is eſſential, that the branches be clear of one another, for the ſun and air to have free acceſs: Pruners ſhould conſider this circumſtance, in all trees, more than they generally do. The reaſon for not ſhortening the branches is, that wood is always thrown out from two or three eyes below a cut, and ſo the tree would become a thicket of uſeleſs wood, if ſuch cutting took place.

The *mode of bearing* in pear trees is on ſhort *ſpurs*, which appear firſt towards the ends, and then form themſelves all along the branches, which do not produce bloſſoms for three or four years from planting, and ſometimes (according to the ſort, or perhaps ſoil) for ſeveral years more. When they are come to fruiting, ſome pears bear pretty much on year old wood, ſome on two, others on three. The ſame branches continue to bear on ſpurs from year to year, and moſt when five or ſix years old; but as in courſe of time the branches may become diſeaſed and barren, and not produce ſo fine fruit as younger wood, it is always proper to procure a *ſucceſſion* of young bearers, as the opportunity of good ſhoots offer, cutting out old wood.

As to *projecting* wood, moſt gardeners allow of it in wall pear trees, though ſome not. The wood ſhould not, however, be ſuffered to project above three or four inches; and though there are bloſſoms at the *ends* of year old wood, yet they ſhould be either cut clean out, or down to an eye or two, for forming fruit *ſpurs*, as they will often do; though they are more apt to produce only wood ſhoots. Theſe ſhoots being cut down again, *turfs* of wood are thus produced, which makes a tree appear ragged; ſo that whether it is beſt to cut *all* ſpare ſhoots clean out, or to cut (ſome of them at leaſt) down to little *ſtubs*, or falſe ſpurs, is hardly yet determined: The advocates for both practices, however, ſpeak very poſitively for *their* way. The cutting clean out is much the neater, and leſs troubleſome way, and is therefore beſt, *if* as much fruit is to be obtained

tained by it: It has been *ſaid* more may be, but I have not ſeen it proved.

The *occaſional* pruning of pear trees during *ſummer* is neceſſary, leſt the ſtrength of the tree be ſpent in vain, the fruit robbed and ſhaded, and the extremities impoveriſhed. Whether all the ſhoots that are clearly known to be wood ſhoots (from their length) ſhould be cut out during ſummer, is a queſtion, but proceed as follows:

Where *fruit ſpurs* are wanted, the moderate wood ſhoots may be left to grow to ſome length, till the wood is hardened, and then broke off to about ſix inches, which, being left to the winter pruning, may be cut down to one eye, with the hope of getting a ſpur there. But even fair ſpurs ſhould not be ſuffered to grow too thick: trees bearing ſmall pears may have theirs four inches aſunder, and the large ſix.

Several *ſummer* ſhoots will come out about the fruit ſpurs; yet it is not adviſeable to cut all of them off as they appear, but only the ſtrong and moſt unſightly: one moderate ſhoot may be left to each, and ſhortened when the wood is hardened, to about ſix inches, and cut clean out at the general pruning. All ſuperfluous ſhoots except thoſe mentioned as allowed of, ſhould be diſplaced while young; but though rubbing, or breaking off, in all caſes are preferable to the knife, do not uſe this method when ſhoots are ſo big as to *tear* the wood with them. Shoots from *ſpurs* will never come to any thing, and muſt not be trained.

The time for *general* or winter pruning of pear trees ought to be *November*, as the bloſſoms are then very diſcernible, and at ſpring pruning they get ſo turgid and tender, that almoſt the leaſt touch knocks them off, or even the jarring of the tree. What is now to be cut out will be underſtood from what has been ſaid; only when the bunches of ſpurs get too thick and projecting, ſome muſt *occaſionally* be removed, and a thin *ſharp* chiſſel and mallet will do the work well, where

the wood is too ſtrong or awkwardly placed for the knife. When a tree gets to the extent of its bounds, it is to be ſhortened down to a well-placed young ſhoot, which may ſerve for a leader; which leader ſhould be already provided by a provident ſelection in the ſummer.

Where *wood* is *wanted* to fill a vacant place, a ſhoot may be accordingly ſhortened; but otherwiſe there muſt be no ſhortening, except down to a ſingle eye, with a view (as was ſaid) to forming fruit ſpurs, where the tree is thin of them. And when *wood* is deſired in any particular part, where there is no ſhoot to cut down for the purpoſe, a *notch* croſswiſe, (ſomewhat long), will generally produce it, and the more certainly, if made juſt above a joint, or knot. Such notching of pear trees does no harm, but rather good; as many chooſe to do it freely, in order to check their too great aptneſs to luxuriancy.

The *thinning* of the fruit on pear trees is frequently neceſſary. They put forth numerous bloſſoms, and many of them fall, and even the fruit will do ſo when it is ſet; but as ſoon as it is promiſing (by the healthy ſhining appearance of the ſkin) that the fruit will hang, thinning to one pear on a ſpur, will improve the fruit left, and help the tree: this work do with a ſmall ſharp pointed knife.

To check the *luxuriant* growth of pear trees, many ſchemes have been tried; but the beſt is here and there to ſtrip pieces of *bark* off, behind the ſtem, and ſome of the principal branches, half round, or rather make ſo many wide *notches*, not going to the pith.

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APPLES are *ſometimes* planted againſt walls, &c.

What has been ſaid of pruning and managing *pears* is applicable to them; the branches, however, may be laid in ſomewhat cloſer; the they will not require ſo much room; yet they ought to have from twenty-five

feet in length of a low wall, or on a high one fomething leſs.

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Mulberries are ſtill more rarely cultivated as wall-fruit.

Theſe trees require good room, as their mode of bearing is moſtly at the end of the trained ſhoots, which are therefore not to be ſhortened. Twenty or twenty-five feet ſhould be allowed them, and a new planted tree is to be headed down as directed for *pears*, &c. Train regularly as many ſhoots as may be in ſummer, and at winter pruning, lay them about ſix or ſeven inches diſtance. A ſucceſſion of new wood muſt be always coming forward, and of courſe ſome old taken out, for the fruit is produced chiefly on year and two-year old wood; and as it comes on ſpurs, and alſo ſmall ſhoots of the ſame year, the leaving ſhort ſtubs (of moderate wood) in pruning, ſeems juſtified, though by ſome condemned.

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Cherries ſhould be found againſt walls in every good garden; but plant *young* trees, not more than two, but better if *one* year only from budding.

A new planted cherry tree is beſt to have but one ſtrong ſhoot from the bud, and then cut down at ſpring, ſo as to have two or three eyes on each ſide, to lay in well to the wall; but if older and fuller of wood, head it down as will be directed preſently, in the article, *Eſpalier Pruning*.

Cherry trees ſhould be trained at length, four or five inches aſunder. The fruit comes from ſpurs all along the ſhoots, on one and two years old wood, which will continue to bear. In pruning have an eye, however, to ſome fair ſhoots for ſucceſſors to thoſe that are getting diſeaſed, or worn out. Some cut all ſuperfluous ſhoots clean away, and others leave a ſprinkling

ling of ſhort ſtubs, which may be allowed; but let them not advance *far* foreright.

The *morella* cherry has a different mode of bearing from others, the fruit proceeding moſtly from eyes along the branches of new, or year old wood, the pruner, therefore, is to lay in a proper ſupply of *young* wood every year, always removing older wood to make room accordingly. For the better opportunity of furniſhing the tree with young wood, the bearing branches of this tree ſhould be at ſix inches diſtance, and then one young ſhoot trained between, makes them three inches diſtant, cloſer than which they ſhould not be. The *morella*, it is clear, ought to have *no* ſtubs left in pruning, with a view to ſpurs, nor muſt any foreright ſhoots be ſuffered to grow at all, but let them be *rubbed* off while very young, or rather while in the bud.

The *morella* cherry is commonly planted againſt *north* walls, where they grow large and hang long, as they are commonly not wanted till late in the ſeaſon to *preſerve;* but if planted upon warmer walls, their fruit is finer, and (when thoroughly ripe) excellent for table uſe in *September*, or *October*, according to the aſpect of their growth: Yet a full ſouth wall may be too hot for it.

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PLUMS of the finer ſorts are often planted againſt walls, and deſerve a good one.

For the pruning of plum trees, the directions given for *cherries* apply to them, only that the branches ſhould be laid ſomewhat wider; i. e. at five or ſix inches, according to the ſort, as free, or leſs free in their growth.

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FILBERDS, or other nuts, may be trained. Lay them at full length, the branches about ſix inches diſtance,

diſtance, ſhortening only the ſhoots of new planted trees, in order to the furniſhing a proper head and ſpread of branches, which ſhould be kept very horizontal, to check their free growth.

They bear upon the ſides and ends of the upper young branches; ſo that young wood muſt be continually bringing in, by removing ſome of the old.

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Currants and ſometimes *Gooſeberries* are planted againſt walls:

Train the lower branches ſomewhat horizontal as far as their allotted room, and then train upwards, filling the middle as they grow. Keep the branches about five or ſix inches aſunder. They bear fruit upon young wood, and on little ſpurs of the old. Superfluous ſhoots of the trained branches, are to be cut down to little ſtubs or ſpurs, about half an inch long, which will throw out fruit ſhoots and ſpurs. The mother branches of currants and gooſeberries will laſt many years; but when good young wood can be brought in for principals, a renewal every three or four years is neceſſary to produce fine fruit. Take care to provide ſhoots to the very bottom of the wall, that no ſpace may be loſt. In the early gathering of theſe fruits for pies or tarts, there ſhould be left a ſprinkling all over the trees to come on for table fruit. They will prove fine.

*** One *general obſervation* may be here made: that all fruit trees mentioned ſince *vines*, are pruned much in the ſame way, ſo that the young gardener will not find the buſineſs of pruning ſo intricate as he might imagine, from the number of words ſeverally beſtowed on the occaſion.

☞ *Wall trees* are ſpoken of as to *ſituation*, *diſtance*, &c. in the ſection of the *Formation of a Garden*, which ſee, with other particulars.

2. OF PRUNING ESPALIER TREES.

The work of pruning *eſpalier trees* is much the ſame as for *wall trees*. The only difference is, that inſtead of being ſpread upon walls, the branches are faſtened to ſtakes, or frames, as trelliſes. The faſtenings are commonly ties of ozier twigs, bark of withy, baſs, yarn, or ſoft packthread, inſtead of nails, which however may be uſed to frame work, if they are ſmall and ſharp pointed. See *formation of a garden*.

As trees planted for *eſpalier* training ſhould be young, let great care be taken to ſet them off right at firſt, by regular ſhoots, full furniſhed immediately from the ſtem; which is effected by proper *heading down*, as below; much as was directed for wall trees, page 130. *Apples*, *pears*, *plums*, *cherries*, &c. in the general need not to be ſo much freed of all branches at planting, as *peaches*, *nectarines*, and *apricots*: There are however gardeners who prune down to the ſtem, *all* ſorts of wall and eſpalier trees, as peaches are.

The *heading down* of a young tree, (i. e. apple, &c.) for an eſpalier, that has only *one* ſhoot from the graffing, or budding, ſhould be ſo low, as to leave two or three, or at the moſt four eyes on each *ſide* of the ſtem, from which will proceed ſhoots properly placed for training. If the tree has *two* ſhoots, one on each ſide, which branch out right and left, ſo as to be made principal leaders, cut each of them down to three or four eyes. If it has *three* ſhoots, the upper one, if not over ſtrong, being ſhortened down to a few eyes, may be trained ſtrait up, and the two lower ones ſhortened as above, as laterals; and thus a good *foundation* will be made for a proper ſpread of branches. If it has *four* ſhoots properly placed for training, two on each ſide, the lower one may be cut down, to ſeven or eight eyes, and that above to three or four: If the tree has more ſhoots, they may be either all cut out to two on each ſide, ſhortening as before, or one (if not over ſtrong)

ſtrong) left perpendicular, being cut down to a few eyes: or if the tree is ſomewhat old, and has a good root, more well-placed ſhoots may be left on, keeping the lowermoſt longer than the upper by two or three eyes, making the upper ones very ſhort. If theſe directions are properly obſerved, an *eſpalier* (or a wall) will be properly and preſently filled with branches.

The beſt *time* for heading down is the *ſpring*, though when trees are planted early in autumn, it *may* be then done. All cuts ſhould be *cloſe* behind an eye. When a ſtrong ſtem is to be cut down at ſpring, remember to place the foot againſt it, to keep the root in its place, and uſe a ſharp knife.

Heading down is adviſed to be deferred till *ſpring*, not only on account of froſts poſſibly injuring the top eye of the freſh cut ſhoots; but becauſe the *head* of a tree helps to puſh out roots. The propereſt time to prune the heads of new planted trees, is when new roots *are* formed; and then a head diſproportioned to the roots ſhould by no means be ſuffered, as the new ſhoots in ſuch caſe would be too weak to be healthy, or fruitful. For *planting* eſpaliers, &c. See page 36.

3. OF PRUNING STANDARD TREES.

The principle of pruning *ſtandard trees* is the ſame, whether *full*, *half*, or *dwarf* ſtandards; and the object is to form a compact handſome round and open head rather ſmall than large, equal on all ſides, with tolerably erect wood, capable (as far as the art of the pruner can go) of ſupporting the fruit without much bending. Perfect ſymmetry indeed is not neceſſary, but confuſion of branches, weak and croſſing, crowded and dangling, is to be prevented by pruning; for a proper, (rather free) uſe of the knife, is capable of doing much towards the beauty and fruitfulneſs of ſtandard trees. A little pruning of ſtandards every year, and a general one (rather free) every three or four years, to

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cut out what is decayed, and ſome of the older wood, where a ſucceſſional ſupply of young may be obtained to ſucceed, is the way to keep them in vigour, and have the beſt of fruit; for that which grows on *old* wood, gets ſmall and auſtere. To take off large branches a thin broad *chiſſel* is proper; but if a *ſaw* is uſed, ſmooth the part with a knife.

Clear trees from *moſs*, by ſcraping them with a long narrow bladed blunt knife, on a bit of hard wood, and cut, or rub off bits of decayed bark, in which inſects are apt to breed, and wipe the part clean. Some uſe a ſcouring bruſh in this buſineſs, the long end hairs of which are well adapted to clean the forky parts. A bit of haircloth is alſo uſed for the purpoſe; and a finiſh is properly made to do the buſineſs well, with a bruſh and ſoap and water.

In the *firſt* year of new planted ſtandards, they are to be cleared in the *ſpring*, of all weak and improper ſhoots, reſerving only a few of the ſtrongeſt. If there are four regularly placed ſhoots oppoſite to each other, it is ſufficient to form a good head, ſhortening them down to a few eyes each, or, (in general) cutting off about one-third may be a rule. What the head will be, may be pretty well foreſeen, by conceiving two or three ſhoots to come from each of the buds below the cut.

If the ſhoots of the tree are weak, or the root but a poor one, cut the reſerved ſhoots down to two eyes each. If the head is not *regularly* furniſhed with ſhoots, a judicious pruner will yet be able to *manœuvre* it into form in a year or two, and this muſt be effected by cloſe pruning the firſt year.

The *ſecond* year (rather in ſpring) attend to the head, and cut out, or ſhorten, ſo as to provide for the future form and ſtrength of the tree; reſerving only ſuch ſhoots as recommend themſelves for their poſition and vigour, as widely placed as may be from each other, and but few in number. After this,

this, the head will form *itſelf*, ſo as to need only cutting clean out a few ſuperfluities: but no ſhortening is allowed, except ſome of the loweſt branches, or any one where wood is wanted to fill a vacancy; for which purpoſe, a weak ſhoot may do, cut down to one or two eyes.

If trees are *too* full of wood, the ſhoots muſt neceſſarily be drawn weak and long jointed, and ſo be the leſs fruitful, and unable to ſupport the fruit they have; but on the other hand, *too* much pruning will occaſion a tree to be always putting forth wood, rather than fruit, and ſo a *medium* muſt be obſerved. The branches ſhould be kept about ſix inches aſunder; and as ſuperfluous weak ſhoots will of courſe be cut out, ſo let alſo the over ſtrong wood: for though it is deſirable to have ſtandard trees of able wood, yet thoſe ſhoots that much exceed the ſize of the reſt, would, if left on, infallibly weaken the others, and make an awkward tree.

Let no ſhoots remain on the ſtems, below the head, nor ſuckers above the roots. With reſpect to *cherry trees*, rather than cut more than neceſſary, drooping branches may be ſuffered, as the fruit is not heavy, and the heads of cherry trees may be fuller than other fruit trees. Wherever a cut is made in a full headed ſtandard to ſhorten a ſhoot, it ſhould be (generally) at an eye ſituated *within* ſide, that ſo the ſhoot from it may point more erectly, as the weight of the fruit is too much for thoſe branches that grow downwards, or quite horizontal.

Gooſeberries and *currants* may be ranked under the denomination of dwarf trees, and the principle of pruning them will be the ſame, as for other ſtandard trees; only more frequently cutting out old wood, to make room for a ſucceſſion of young. The keeping theſe trees, or buſhes, more *open* than they commonly are, would improve the fruit in ſize and flavour, and bring it forwarder; yet ſome of them ſhould be ſuffered to grow rather full of wood, in order to keep the fruit longer,

longer, especially in a *northern* aspect of the garden, or some shady place; and if to this situation and fullness, be added *matting* or *netting*, they may be preserved till *November*.

The *time* of pruning these trees, is commonly held to be indifferent, and any time between leaf and leaf may be adopted to cut them as opportunity offers. But when they are getting *into* leaf is (perhaps) the best time; as when pruned *early*, there is frequently a loss of almost the whole fruit, by birds eating the buds. Leaving the whole head on till *spring*, is a security as to a crop of fruit, as the case would be bad indeed, if *some* good branches are not left, properly furnished with uninjured buds; but still it is allowed, that an early pruning strengthens the tree, and tends to encrease the size of the fruit.

Currant trees need not to be kept so open as *gooseberry*, the branches of which should be (for *fine* fruit) five or six inches asunder, and as little shortened as possible. Those sorts of gooseberries whose shoots grow in a *curved* manner, may have their long branches, when in fruit, supported with little forked sticks. Keep these trees clear of suckers, and all shoots from the stem, that are within nine or ten inches of the ground.

For planting standards in *orchards*, &c. See section 3.

4. OF PRUNING SHRUBS.

Many *shrubs* are cultivated for their *ornament*, and some for their *fruit*; of the latter kind are *raspberries* and *barberries*.

RASPBERRIES bear fruit on little side shoots of the present year, proceeding from stems of the last, and sometimes produce a little on those of the same year. To prune or dress the shrub, therefore, first cut out all the old bearers, whose wood dies, then cut out, close to the stool, all the new shoots, except three or four

four of the beſt ſituated and ſtrongeſt, which may be carefully twiſted from the bottom upwards, or tied together at the top, or if upright and ſtrong, left to ſupport themſelves ſingly. The beſt ſituated, or thoſe ſtanding cloſe together, near the centre of the ſtool, and ranging well in the row, are thoſe to be ſelected. This done, let all ſtraggling ſhoots between the rows be *clean* dug out. Shorten raſpberries, either juſt below the bend, or from three to four feet high, according to their ſtrength.

Raſpberries muſt not be ſhortened in ſummer; and the *time* for cutting them is from *October* all through winter, till they begin to ſhoot at ſpring, though the former is the beſt: eſpecially if any thing is to be planted between their rows. See page 38.

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BERBERRY; is a beautiful and ſomewhat large ſhrub, which ſhould be ſuffered to grow with a full head, like a dwarf ſtandard tree. It bears along the ſides of both young and old wood, but chiefly towards the ends, and its branches ſhould, therefore, not be ſhortened, except with a view to throw out wood. Keep the root free from ſuckers, and the ſtem from ſhoots in its lower part, and prune out weak, luxuriant, ſtraggling, and croſſing branches, forming it to a ſomewhat round head, which keep moderately open. Let the ſtem be freed from lower branches to the height of three, four or five feet, according as the ſhrub may be deſired to approach to a tree. See page 76.

STRAWBERRIES require pruning off the runners during ſummer, which ſtrengthens the plants, keeps the ſoil from being exhauſted, and gives all a neat air of culture. This work ſhould be particularly followed up in *edgings* of ſtrawberries, that they may not run over the walks: If plants, however, are wanted

wanted for new beds, they muſt be ſuffered to run. See pages 39, 78.

The *dreſſing* of ſtrawberries conſiſts not only of pruning from runners; but cutting down the great leaves in *autumn* (early) with a ſcythe; or, which is better, by taking them up in the hand, and uſing a knife. At this time they muſt be weeded, and the ground ſtirred between them, deep enough to cut the ends of the roots a little. Then there ſhould be ſpread over the beds a *little* rotten dung, or good freſh earth, and all afterwards kept free from the weeds. Let the *ſurface* of the ground be ſtirred again in *ſpring*, and any hollows that may be between the plants filled up with earth, and a little dung amongſt it, if none was applied in *autumn*. Thus with good management the delicious ſtrawberry will be had in abundance and perfection, the ſeaſon not being unpropitious.

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FLOWERING SHRUBS are of great variety, and the method of *pruning* them is to be determined according to the ſeveral *modes of bearing*, of which conſider chiefly theſe; that is, whether they produce their flowers upon the *laſt* year's ſhoots, or the *preſent*; on the *ends*, or the *ſides* of their branches. If a ſhrub bears on the *laſt* year's ſhoots, it is evident that it muſt be cut away no more than is neceſſary to keep it within bounds, open, and handſome as to its form; in this caſe, it is the buſineſs to cut clean out, or *very* low, what is to be ſpared. If a ſhrub bears on the *preſent* year's ſhoots, the old wood may, and muſt be cut down freely, ſo however as to leave eyes enough for new ſhoots to proceed from, to make a ſufficient head and ſhow. If the ſhrub bears altogether, or chiefly at its *ends*, no ſhortening muſt take place; but if ſome of the branches are too long, they may be either cut out, or quite low, leaving the ſhorter ones to bear. If the ſhrub bears along its *ſides*, the

the ſhortening is of no conſequence, and the deſired form may be freely provided for at pleaſure.

The *ſeaſon* for pruning ſhrubs is generally reckoned the *ſpring*, but *autumn* is better, if not too near winter; as at this time, ſharp weather might occaſion ſome of the ſorts, (as *jaſmines* and *honeyſuckles*) to die down. The *time of flowering*, muſt in ſome meaſure direct the time of *pruning*. Shrubs that flower in winter, (as the *lauruſtinus*,) ſhould be cut in ſpring. Thoſe that flower in ſpring may be pruned immediately after their blow, or in ſummer. Thoſe that flower in ſummer ſhould be pruned in autumn; and thoſe that flower in autumn ſhould be pruned either ſoon after flowering, or in ſpring.

Be ſure to take off in time, i. e. as ſoon as diſcovered, all ſuckers and over ſtrong ſhoots from ſhrubs; for by their luxuriancy they greatly impoveriſh the proper ſized branches, which are the fruitful ones, and ſuch large ſappy wood looks very unſightly.

The *height* of ſhrubs in certain ſituations, is material, and to provide for this, the art of pruning is in a great meaſure competent. To keep them low, cutting down is of courſe neceſſary; but it will be well alſo to make the ſoil poor if too rich. To encourage them to mount, keep trimming off cloſe the lower branches, and improve the ground by digging and dreſſing occaſionally.

Flowering ſhrubs ſhould be better attended to, as to pruning, than they commonly are; for we ſometimes ſee them either wholly neglected, or cut down at random, perhaps only ſheared into a little form; and ſo they make a return quite ſuitable to the deſert of the owner for his neglect. To be crouding full of branches, prevents the production of flowers. Shrubs ſhould not be choaked up from ſun and air, either in themſelves, or by their neighbours: The larger plants muſt not be ſuffered to overſhadow the leſs, if poſſible.

The

The *general* directions already given for pruning ſhrubs might ſuffice, but that the young gardener may not have to diſcover (by obſervation alone) the proper application of the given rules, he is here particularly directed to the work of pruning a *few* of the more common ſorts.

Roſes bear upon ſhoots of the preſent year, and upon thoſe formed after Midſummer in the paſt year, but chiefly upon the former. Therefore, they may, or rather ſhould be cut down low, leaving only three or four eyes to a ſhoot; except ſome of thoſe ſhort ſho formed the laſt year too late to blow then, which lea whole. If roſe trees are not cloſe pruned they w be unable to ſupport their flowers properly. Uſe ſharp knife and cut cloſe behind an eye or bud. Ro for *forcing* ſhould be pruned in *July* and *Auguſt*.

Honeyſuckles flower on ſhoots of the preſent ye and therefore whether trained to walls, or kept buſhes, ſhould be alſo pruned cloſe, but not ſo ſhort the latter caſe as the former; for thoſe againſt wa ſhould be cut down to an eye or two, and thoſe in buſ to three or four eyes.

Sweetbriars flower on ſhoots of the preſent ye and therefore ſhould be cut after the manner of hone ſuckles. Theſe ſhrubs (and moſt others) are ſeldo pruned down enough; ſo that in a few years they get very rambling and unſightly; but if kept compact we have beauty, as well as ſweetneſs, to recompence our care. In all caſes, a leſs number of fine flowers, obtained by ſhort and open pruning, is certainly preferable to many indifferent ones.

Lilacs bear their flowers at the ends of ſhoots of the laſt year, ſo of courſe at ſpring muſt not be ſhortened. If got rambling and crowded, cut either clean out, or very low, what may be ſuperfluous. If they need much reduction, let them be cut down as ſoon as (or ſomewhat before) they have got off flower, and then the ſhoots

that

that come after will form for blow before the ſummer is out, for next year.

Laburnhams bear along the ſides and ends of old wood.

Jaſmines ſhould be pruned down cloſe, even to half an inch, and when trained to a wall, the ſhoots kept rather wide, like vines, (particularly the ſcarlet trumpet ſort) as they bear at the ends of weak ſhoots of the year; which ſhould therefore (as all others bearing in the ſame way) never be touched in *ſummer* with a knife, but be ſuffered to grow rude.

Sennas bear alſo on ſhoots of the preſent year, yet are beſt left rather full of wood: prune them as ſoon as off flower.

Syringa, or *Mock orange*, and *Hypericum frutex*, bear along the ſides, as well as ends, of old wood, and of courſe may be ſhortened.

Spirea frutex, *Guelder roſe*, and many others, bear on ſhoots of the year, and may therefore be pruned ſhort.

Pyracantha bears (chiefly) on two and three years old wood; therefore the oldeſt wood is to be cut out, and young in every part retained, and at length. The time of pruning ſhould be *autumn*; but early in *ſpring* will do, as the flowers may then be ſeen.

For the pruning *foreſt trees*, ſee page 118. *Barberries*, ſee page 165.

SECTION XIII.

OF HOT BEDS.

THE *dung* of animals, but chiefly of horſes, is put together for *fermentation*, in order to form bodies of heat for two purpoſes. 1. To raiſe vegetables, flowers, &c. not otherwiſe to be produced, or, at leaſt, not in perfection. 2. To raiſe ſuch things, as though

they come in perfection by open culture, yet may be forwarded by artificial warmth.

According to the *quantity* and *quality* of the materials put together for hot beds, the heat will be proportioned as to ſtrength and duration; and by a judicious uſe in making, and the management afterwards, many advantages may be obtained from them. The great point is, to ſuit the degree of heat to the *nature* of the different plants to be cultivated, that they may have neither more nor leſs than is *neceſſary* to promote a regular vegetation.

Two *errors* are common in the uſe of *hot beds*, ſowing or placing in the ſame bed things of a very *different* nature, as to the climate they grow beſt in, and forcing with *too* much heat even the tendereſt. Though it may not anſwer our often too haſty views, the heat of a bed had better be ſlack than otherwiſe. A ſtrong hot bed, that ought (at leaſt) to be made a fortnight before it is uſed, is ſometimes furniſhed by impatience in a few days, and various ill conſequences follow, which naturally fruſtrate expectation.

The *place* where hot beds are worked ſhould be open to the full ſun, catching it as early as poſſible in the morning, and having it as long as can be in the evening; and if not naturally ſheltered, it ſhould be ſcreened from the *north* and *north-eaſt* winds by a boarded fence, or rather one of reeds, as from a ſolid fence the wind reverberates; but ſtraw, or flake hurdles, ſet endwiſe, may do. A ſcreen of ſome ſort, (and a cloſe clipt *hedge* is as good as any) not only protects the incloſure from the harſher winds, and confines the warm air, but keeps a rather unſightly work from view, and ſtraws from blowing about, the litter of which is ſo diſagreeable. In large gardens, however, they have *detached* grounds for the work of hot beds, where ſuch litter is of no conſequence.

Working of the dung is neceſſary previous to the making a hot bed; i. e. it ſhould be thrown together

on

on an heap, in a conical form; and when it has taken a thorough heat, and has been ſmoking or ſweating for two or three days, it ſhould be turned over, moving the outſide in, or mixing the colder parts with the hot. When it has taken heat again for two or three days, give it a ſecond turn as before, and having lain the ſame time, it will be in proper order for making a good laſting bed with a ſteady heat. If in haſte, it may be made into a bed after the firſt heating; but it will be better for ſhifting again, or even a third time. When dung is ready before wanted, keep turning it over, leſt it be too much ſpent. It will be proper to begin to work *freſh* dung a week or ten days before it is to be uſed; but if the dung is not freſh, it is only neceſſary to throw it together for once heating.

Dunghills, from which it is deſigned to collect materials for a hot bed, ſhould be taken notice of in time, that they are not left to work themſelves *weak* by long ſmoking, without opening and turning over. Beds may be made of dung from a week to a month old.

If heavy *rain*, cutting *wind*, or driving *ſnow*, ſhould keep the heaps from heating, and the dung is wanted, lay ſome ſtraw round it, and it will protect and fetch up the heat. If at firſt putting it together there is not a general *moiſture* in the dung, it muſt be given it, by caſting water evenly over it as it is laid. This may be done with a hand-bowl from a pail, but it would be better to uſe a large watering pot. No water muſt be uſed to dung when it is got *dark*; this is, however, the colour that it *ſhould* begin to have when put together in a bed, which the directions given for working it will bring it to.

The *ſize* of a hot bed, as to length and breadth, is (of courſe) to be according to the *frame*; and the height of it according to the *ſeaſon*, and the degree of heat requiſite to the nature of the *plant* to be cultivated. In a dry ſoil, a bed may be *ſunk* in the ground, from ſix inches to a foot, to make it more convenient to get at

and manage. But beds made *forward* in the ſeaſon ſhould rather be on the ſurface, for the ſake of being able to add the ſtronger *linings*, &c.

The bed ſhould not be of greater dimenſions than neceſſary to hold the frame up firmly, i. e. three or four inches wider every way, though ſome approve of making it ſix, which may be proper if the frame is ſmall, as otherwiſe the body of dung might not hold heat enough for the neceſſary length of time. As a guide for laying the dung regular, (according to the ſize of the frame) drive *ſtakes*, of about the height the bed is to be, at the four corners.

It is the practice of ſome gardeners, when they *mould* the bed, to take the frame off, and lay it two or three inches thick all over, and then put the frame on again. This is done to guard againſt ſteaming, and is proper when the frames are ſhallow: in this caſe, the bed muſt be ſix inches wider every way than the frame, in order to hold up the mould for the frame to reſt upon.

In caſe of an *inſufficient* quantity of good *horſe dung*, that of *cows*, *oxen*, or *pigs*, if it is ſtrawy, and not *too* wet, may be mixed with it, in the proportion of one-fourth, or upon a pinch more; eſpecially in an advanced part of the ſeaſon, or to cultivate things that are only forcing, and do not naturally require heat. In the caſe of a deficient quantity of proper materials alſo, ſome dry old worn-out horſe dung may be laid at bottom, and a little of it on the top. Offal *hay* may be mixed as the bed is made; or a little of mown *graſs*, or *weeds*, eſpecially for late made beds; but *clear ſtraw*, well wetted, may be put at the bottom a foot thick, and reckoned about equal to five or ſix inches of dung. Cucumbers and melons have been raiſed upon *ſtraw* beds, mixed with ſea coal *aſhes*; and thus the rank ſteam of dung avoided, which ſometimes injures plants, if it does not give the fruit a leſs agreeable taſte than they otherwiſe would have. *Sea coal aſhes* among dung, has been recommended to continue the heat of the bed, and

and to moderate it, in the proportion of one-fifth or ſixth part; *tanners bark* has been uſed in the ſame way; and theſe have been ſometimes mixed generally, and at others in layers three or four to a bed.

The *making* of a hot bed is performed thus: lay ſome of the moſt ſtrawy dung at bottom, and keep that which appears leaſt worked toward the middle. Let all be *well broke*, and laid evenly without lumps; keeping the ends and ſides upright, (or rather hanging over) not ſuffering them to draw in, leſt the bed be made too little for the frame, or ſhould thus catch wet. Having laid it about half a yard high, moſt gardeners *trample* it with the feet ſet cloſe, and again when raiſed a foot higher, and laſtly when near finiſhed; but *beating* it down well with the back of the fork is by ſome gardeners thought ſufficient, except indeed the dung be freſh and ſtrawy, and then trampling ought to be uſed. The *cleaner* dung is, it muſt not only be more trampled, but more wetted, and the greater quantity of it uſed. To make beds of *unſoiled ſtraw*, it is recommended to lay it in a pond for two or three days, and then to throw it in a heap to drain and heat a little firſt.

If any dung is to be uſed directly from the ſtable, let it be equally mixed with the reſt; but if there is a coldneſs in the other dung, it will bring the heat forwarder, by laying a good part of the freſh in the middle, which will ſoon kindle, and ſpread warmth. The litter that is made uſe of for this purpoſe ſhould be *foul;* and if not, it may be made ſo, by mixing cow or hog dung with it, or rather by collecting the draining from a farmer's muck hill, and ſprinkling with it; which helps to fermentation.

The beſt *ſort* of dung is that of *bean ſtraw*, next *wheat*, *rye*, *oats*, and *barley*. When the ſeaſon is pretty much advanced, hot beds may be made of *graſs* mowings, (as from an orchard) and *weeds*, which is a common practice in the *cyder* countries. Theſe

heats, however, are often too violent, and laſt not long; yet may they be lined with the ſame materials if done in time, otherwiſe if a green hot bed gets greatly cool it will not be recovered. A graſs bed may be uſed as ſoon as warm, but let it not be overweighted by putting on heavy frames, or more mould than neceſſary. It ſhould rather be worked with hand glaſſes, or oiled paper covers.

Hot beds are ſometimes made of the refuſe *bark* of a tanner's yard, and alſo of *oak leaves*; but theſe muſt have *walled pits* for them, of a large ſize, and are ſeldom uſed but in hot-houſes. A bark-bed properly made, and managed by forking up at two or three month's end, &c. will hold a fair, moderate, and ſteady heat, four, five, or ſix months.

The *bark* is to be got freſh, after it has been thrown out of the vats a few days, and if not moderately dry, kept a few days longer to drain, and if the weather is fair, it may be opened to the ſun to dry; for it will not ferment if it is put together wet. When it is made into a bed it muſt be only beat together with the fork, and not trampled. In a fortnight it will have come to a fine heat, for immediate uſe.

The *pit* ſhould be eleven or twelve feet long, five and a half or ſix feet wide, and a foot, or a little more, higher than the bark in front, and two feet higher behind, to receive the mould on a body of bark, three feet deep: But if for the cultivation of any thing in *pots*, as there will need no mould, the pits need not be ſo deep, the pots being plunged in the bark: or the pit may be made level all round, of a depth to hold the bark and mould, on which frames of wood may be ſet. Let the pit be ſunk one third, or one-half in the ground, as the ſoil about it is dry or not.

To *encreaſe* the heat of a *dung* bed when it declines, a warm *lining* of ſtraw, or hay, put round it, a foot thick, and laid high up the ſides of the frames, will recover it for a few days; but a lining of *hot* dung,

one

one foot and a half wide at bottom, and narrower at top, ſhould be applied firſt to the back, and in about a week after to the front, *before* the heat is greatly gone off; and if very bad weather comes, there ſhould be a lining of ſtraw all round this. In caſes of *great* declenſion of heat, the *ends* ſhould have *hot* dung applied to them, or, at leaſt, a good thickneſs of litter, or ſtraw. Lay all *linings* a few inches higher than the bed, to allow for ſinking; or, not being laid quite ſo high at firſt, add more afterwards, when a little ſettled. Early made beds may require two or three repeated linings. Should dung of a briſk heat for a new lining be wanting, the old lining may be worked up with what there is, and if ſhook up with quite freſh (but foul) dung from the ſtable, do very well.

To *decreaſe* the heat of a bed, ſeveral *holes* may be made in it, by thruſting an iron bar, or a thick ſmooth ſharp pointed ſtake, up to the middle, which holes are to be cloſe ſtopt again, with dung or hay, when the heat is ſufficiently abated.

The *uſes* to which hot beds may be applied are various, but chiefly for the cultivation of *cucumbers* and *melons*, for which ſee the next ſection. At the ſpring of the year, hot beds are commonly made uſe of for forcing crops of ſeveral vegetables, as *radiſhes*, *carrots*, *cauliflowers*, *lettuces*, *potatoes*, *turneps*, *kidney beans*, *purſlane*, *tarragon*, *ſmall ſallading*, &c. *Fruits* of ſeveral ſorts, as *cherries*, *ſtrawberries*, *raſpberries*, &c. are ſometimes brought forward by dung heat; as alſo various *ſhrubs* and *flowers*, by means of *forcing-frames*. Tender *annuals*, as *balſams*, and other flowers, that neceſſarily require heat to bring them up; and the leſs tender, and ſome even of the hardy ſorts, are alſo cultivated on hot-beds, or other aſſiſtance from dung, to produce an earlier blow than could otherwiſe be had. Directions for which, will be given in their proper places. See Sect. 18.

As to the forcing *fruits*, *peas*, *asparagus*, and the raising of *mushrooms*, these things are not commonly practised, and it can hardly be expected in such an *initiatory* book as this, to find instructions for all things.

SECTION XIV.

OF RAISING CUCUMBERS AND MELONS.

1. OF RAISING CUCUMBERS.

See *Cucumber* in the next Section.

GARDENERS usually provide three crops of *cucumbers* in the season, all of which will be indebted to *hot dung* to produce them; except sometimes indeed, the last sowing be upon cold ground; which, in some favourable situations, and in some seasons, may do for picklers. We begin with the *early* crop, which is most valued.

Make a *seed bed* of the size of a one-light frame, (or a two-light were better), from three to four feet thick, and if *ambitious* of being forward, do it sometime between the first and fifteenth of *January*, though some gardeners sow about *Christmas*: But the sooner this work is begun, the more hazard there is of failing, and the more skill and trouble will be necessary to manage them successfully.

The *young* gardener is advised not to attempt this business till the middle of *February*; and then, if he has good fortune, he will cut fruit about the middle of *May*. When he has attained some skill in the work, he may begin sooner; for there is nothing that professed gardeners are so fond of exhibiting, as *early* cucumbers, which is a proof, that no little ingenuity and

and attention is neceſſary to produce them. All favourable circumſtances coinciding, as ſowing the forwardeſt ſeed in kind, mild and ſunny weather, and plenty of dung, with good frames, managed by ſkill and induſtry, early cucumbers are ſometimes raiſed in about eight weeks, and later in the ſeaſon have been raiſed in ſix; but near upon three months muſt *commonly* be allowed.

A *bed* being ready, agreeable to the directions given in the laſt ſection, which may be four feet high in *January*, three and a half feet in *February*, and three feet in *March*, or the medium as a general rule; let it be covered with the frame and lights, raiſing the glaſſes a little to let off the ſteam that will come ſtrongly from the bed.

When the *heat* has been up three or four days in a ſingle light, or a day or two more if a two light frame, let it be taken off, and ſee that the ſurface of the bed is perfectly level, but rather riſing behind; and if you think the bed is hardly ſtrong enough, the opportunity is given to add a courſe or two more of dung. Having levelled the bed neatly with the fork, beat it ſmooth with a ſhovel or ſpade, and put the frame and glaſs on again.

The *temper* of the bed is now to be attended to, that it be not moulded till the *burning* heat is over; a judgment of which may be formed, by keeping two ſharp pointed ſmooth ſticks thruſt in behind, and occaſionally drawing and feeling them, by a quick graſp of the hand. Endeavour to hit the *exact* time, not putting the mould on too ſoon, as it is liable to burn, nor delaying too long, and ſo to loſe time, and too much of that heat, the bed was made for.

The *moulding* is thus; lay all over the bed about three inches thick of *rich* looſe (not over light) and *dry* earth, and add as much in the centre of the light as will raiſe a hill eight or nine inches deep, which as ſoon as warm through, is to be uſed, except the bed

ſeem *too* hot, and likely to burn; in which caſe, draw the chief of the mould aſide round the frame, that the heat may have vent in the middle, for a day or two. As it is a thing eſſentially neceſſary in the cultivation of early cucumbers, to have *rich* earth, properly *dry*, it ſhould be prepared, and laid by in *autumn*, in ſome airy ſhed or hovel. Let it be, if poſſible, ſome freſh under turf earth, mixed with about one fourth part of thorough rotten horſe dung, often ſtirred together to incorporate and ſweeten.

The *ſowing* may be made upon the hill of mould, levelled down to about ſix inches deep; but if any ſuſpicion of burning (or in ſhort at any rate), it were better to ſow in a ſmall *pot* or two, which ſhould be filled with the warm mould, and plunged a little way in, more or leſs according to the heat of the bed, for if the bed appears to be *over* hot, the pot may be raiſed from it; cover the ſeeds half an inch, and add a gentle preſſure of the earth upon them. In a bed of proper temper, they will be up in three or four days, and ſooner or later, if there is too ſtrong or too weak a heat; though the *age* of the ſeed will occaſion ſome difference. *Very* old ſeed (which ſome gardeners are fond of, as running leſs to vine, and ſo reckoned the more fruitful,) will ſometimes come up weak, and alſo rot, when the mould is damp, and the heat not ſtrong; ſo that ſeed of two, three, or at the moſt, four years of age is to be preferred: That of a year old only comes up certainly, but too luxuriantly.

Whether the firſt ſeeds come up, or not, on the *third* day, ſow a few more, and ſo again and again; for the early young plants are incident to failures, from various cauſes. As the ſeed muſt not be ſown in wet earth, ſo if it gets *too* dry, ſprinkle the mould to moiſten it a little below the depth of the ſeed; but let it be with water previouſly ſet in the frame (in a bottle) to warm. Be ſure to give the plants *air*, according to the weather, raiſing the lights from one

half,

half, to a whole inch; and now, and ever after, while there is a ſtrong heat in the bed, tilt one corner of a light for the ſteam to paſs off on nights, and let a mat hang, or be nailed looſely over the open part, to keep out the wind.

The *pricking out* the young plants is to be done when they are three or four days old, taking them up carefully, and the mould being warm, put three in a ſmall pot, as the common practice is; but no more than two, or only one in a *ſmall* pot is a good method. If a ſingle plant is put in a pot, it certainly may be expected to grow ſtronger, and be continued longer therein, and three of theſe may be planted cloſe together in the fruiting bed. If only one plant is put in, ſet it upright in the middle of the pot nearly up to the ſeed leaves. If more are put in, take the mould out of the pot in a baſon-like form an inch or more deep, as the ſhanks are, laying the roots ſmooth towards the centre, and the leaves towards the edge of the pot; cover up to the top, and give the earth a gentle preſſure: the root ends may be clipt, if long.

If the mould is *very* dry and the bed hot, a *little* water may be immediately given to the *roots*; but if otherwiſe, the next day will be beſt.

Give very little *air* the firſt day, but afterwards more, as the ſun ſhines or not, or the day is mild or ſharp, ſtill or windy. As the plants get older and hardier, air may be given up to two inches, when there is a good heat, and extraordinary fine weather, to three or four inches of tilt: For this purpoſe, wedges of wood, about four inches thick at the wide end, are proper. If ſuſpicious of the air coming in too *ſuddenly*, tack a bit of cloth, or mat before the place. *Air* is to be given in different *degrees*, regularly as the weather alters in the courſe of the day;—a little air in the morning, more as the day advances, and leſs again as it declines.

Cucumbers will not do well, if the *air* in the bed is long confined, or ſtagnant: *Sun* is neceſſary as well as air, but as that we cannot furniſh, every advantage that *is* in our power we ſhould not fail to make uſe of with care. The plants are to be *nurſed*, and preſerved moderately warm, by keeping the pots plunged leſs or more in the bed, placing them towards the outſides of the frame when there is a great heat, and more in the middle when it is moderate.

Keep ſome *mould* round the inſide of the frame, ready to earth up the pots to the rim, as the heat declines. There ſhould not be leſs than two, or more than three inches depth of mould, in the intermediate ſpaces of the frame: for when the bed is moulded too thick, it keeps down the heat too much, and occaſions *burning*. Young plants ſhould be guarded from *much* ſun, if the ſeaſon is advanced, and eſpecially when the bed is hot; Give air in theſe caſes freely.

Attend to the *weather*, and if rain, ſnow, or wind, is either of them likely to chill the bed much, provide againſt it in time, by laying ſtraw round; and if the heat naturally declines much, *line*, &c. as directed, page 174, in order to recover and keep it up, for the plants will ſoon be ſpoiled, or loſt, if the bed gets cold. They are to grow in the pots till their firſt rough leaves are two or three inches broad. When there is only one in a pot, a plant (upon a pinch) may grow in it till it bloſſoms.

Uſe *water* (ſoft) but moderately at firſt, till the roots get ſpread about the pot, and then wet the ſhanks of the plants as little as can be helped, if the ſeaſon is early, or there is little ſun. When the roots are got *to* the bottom of the pot, take care to water to the bottom; but over-much watering of young plants makes them ſickly. Once a week, at an early ſeaſon, will be ſufficient, except the heat is very ſtrong in the bed, and the weather very ſunny: the water muſt be in a ſmall degree warm,

warm, and given in the morning towards the middle of the day. Shut them close for half an hour.

If the *seed bed* is not likely to hold the plants so long as directed, (or nearly) in a free growing state, an *intermediate bed* should be made in *time* to receive them; for it is not proper to plant them out into the fruit bed *too* soon, lest there be a failure in keeping up its heat to set the fruit, and bring it on. This intermediate bed should be made of proportionate strength, for the *time* it is wanted, and may do at two and a half, or three feet thick; nor need there be any great objection to an intermediate bed, as it tends to insure success, and brings the plants on faster, and saves trouble in keeping up the heat of the seed bed.

Burning is a thing to be suspected when a bed is very hot, and in proportion as the mould is damp; and should therefore be seen to, by drawing away some mould from the bottom near the middle; and if it appears discoloured, of a greyish hue, and caked, let what is so be taken out from all parts of the bed as soon as possible; but take care that in doing it, too much cold air do not get in and damp the bed, or injure the plants. Do this work at the best time of the day, while the sun shines, if it may be, and rather at twice, allowing an hour between. Fill up with fresh and dry mould, and keep the glasses close, till the earth is got thorough warm again. Burning, however, is not of so much consequence now, as when the plants are put out to fruit, for the *pots* may be drawn up from the evil; but burnt mould contaminates the air, as well as injures the roots that it reaches to. See *Burning* again presently.

Steaming must be guarded against, and the rank effluvia which rises *in* the bed at first, and whilst the dung is quite hot, must have *vent* night and day, by raising the lights. A little rise will do on nights; and if a mat hangs before the aperture, or is nailed down loosely over it, the too sudden entrance of cold air will be prevented. But when the strong heat of the bed is certainly over,

shut

ſhut cloſe on nights, and give but little air in unfavourable days. Rank *ſteam* is ſometimes drawn into a frame from the outſide of the bed, occaſioned by the *mats* hanging over it; therefore, in covering, it is neceſſary to keep *up* the ends of the mats, ſo that the glaſs and frame only be covered. Danger of ſteaming ariſes alſo from the application of freſh linings, the ſmoke of which, wind may drive into the frames; ſo that the lining ſhould either be covered with two or three inches of mould, or, which is better, a good thickneſs of fine dry hay. Sometimes ſteam will *inſinuate* itſelf round the frame within, through the bed ſettling unequally, ſo that the mould draws from it: Prevent this by filling up the apertures.

Covering up at night has been juſt directed to be *only* over the glaſſes, for a reaſon given. Put the cover on a little before ſun ſet, and take off a little after ſun riſe, except very bad weather dictate otherwiſe; yet remember, that *light* is a moſt neceſſary article in the welfare of plants, and guard againſt permitting cover longer than compelled to it. While the bed is in a good heat, one mat is ſufficient, but yet if the weather is ſharp, more ſhould be uſed; for though not neceſſary for the warmth, it will be uſeful to keep the ſteam of the bed from being ſo ſuddenly *condenſed* as to drop on the plants, which would injure them. As the bed declines in heat, and the weather is cold, a thicker covering muſt be put on; and a very warm covering is made thus:—lay on a mat, and over it a coat of ſtraw, or rather hay, and then a mat on the top, which tack down round the frame. It will help to warmth, to puſh into the dung ſome little ſticks round the frame, and fill up the ſpace with hay. Covering *round* the bed with ſtraw and *lining* have been ſpoken to: let the applications be made in time.

The *ſeed bed*, by good management, may be kept with a good growing heat for ſix weeks, when the plants

plants being about five weeks old, will be ready fo putting into a new bed to bear fruit.

Stopping the plants is to be performed about a week before they leave the ſeed bed; i. e. as ſoon as the ſecond rough leaf is expanded, and ſhews in its boſom the little *bud*, or eye, that produces a runner. This is to be nicely cut off with a pen-knife, or ſmall ſharp pointed ſciſſars, or picked out with a needle, though, if it gets forward, it may be pinched off. Soon after this operation, the plant thickens, and will puſh for runners again, which the ſtopping is deſigned to diſpoſe them to; and the effect is an earlier and more plentiful bearing. The practice of ſtopping is *again* to be performed upon the firſt runners when they have three joints without ſhewing fruit.

The *fruit bed* comes now, and it ſhould be made of *good* materials, duly prepared, and well put together, towards four feet thick. It ought not to be of a ſize leſs than for a two-light, but better for a three-light frame; as the heat is more certainly to be kept up a proper length of time, in a full ſized frame, without which all the previous labour is loſt. Preparations muſt be made for this bed at *leaſt* a fortnight before it is wanted, in the way directed in the laſt ſection.

Before *earthing*, take care that the *burning* heat is over, and that the mould to be uſed be properly *dry*. Lay it all over the bed not more than three inches thick, (for reaſons given, page 180) making hills where the plants are to be ſet about twelve or fourteen inches depth. A two-light bed (of proper materials) will not be ready for moulding in leſs than a week or ten days from making; nor a three-light in leſs than ten days or a fortnight. But if it ſhould be deſired to plant out quick, on account of the ſeed bed having got cold, a ſecurity from burning the *plants* is found in forming a hole in the bed, where the plants are to be, two inches deep, and about a foot, or fifteen inches over, and filling up with freſh *cow dung*; through this the heat will not

burn, and if it catches the other parts of the bed, the diſeaſe may be eaſily remedied, in the way before mentioned, without diſturbing the plants. Some gardeners place *turf* under the plants, with the graſs downwards, to prevent exceſs of heat; and it helps to keep the mould, in other parts, from burning, to ſtir it about in time. A preventative uſed by ſome, is to put on a layer of five or ſix inches of *old dung*, when the bed is made. It ſhould ſeem, that a layer of about three inches of *old bark* might prevent burning. See *Burning*, pages 180, 181.

Planting is to take place as ſoon as the heaps of mould are warm. Spread the earth on the top a little, and having the hills a full ten inches depth, make a hole in the middle ſix inches deep, to receive the pot of plants; which pots will be from four and a half to five inches deep, and conſequently the plants ſink in this hole a full inch more in mould than they were in the pot; and they will have four inches depth of mould at the bottom, which there ſhould be below the roots. Draw the mould up to the plants, and preſs it gently between, and to them, all round the hillock. It is ſpoken here of a pot of plants with three, but if only one in a pot, the whole hill muſt be thrown down to four inches depth, and the plants, with all the mould, ſet one cloſe by the ſide of the other, and then filled up and round with the earth of the bed.

To *ſhift* plants out of the pots with the ball of earth entire about them, put the fingers between the plants, and turning the pot up, give it a gentle tap on the knee, or edge of the frame, and the whole will come out; a little preſſure at the ſame time through the hole at bottom, with a finger of the other hand, will aſſiſt: turn the plants up carefully, and place them in ſo. To ſecure their coming out whole, water the pots to the bottom the day before; and if not too wet, they will ſlip out. If the plants hold tight to the pots, when turned up, a long thin narrow bladed knife will be

be proper to looſen the ſides. If the mould ſhould fall from the plants, carefully ſpread the roots in planting, and they will be ſure to grow, only their having no mould to them will occaſion a little loſs of time till they have ſtruck root again. Thus having *ſettled* the plants, ſhut the lights cloſe till all is thorough warm, and then give a little air; if the mould put round the roots be dry, give a little water.

Management as to *air*, *covering*, *watering*, *lining*, and guarding againſt *burning*, *ſteaming*, &c. is now to occupy the conſtant attention of the gardener: On theſe heads, what has been before ſaid may ſerve for inſtruction now; only as the ſeaſon advances, and the plants get ſtrong, the more air and watering may be ventured on, and if the heat of the bed is good, leſs covering will do. As the ſeaſon advances, *water* earlier in the morning, or later in the afternoon, ſo as not to have a full ſun come directly upon the leaves while wet; for drops of water act as convex glaſſes, to draw the rays to a focus, and thus ſcorches. As the weather may be cool, or the bed gets cool, *water* the more ſparingly; and in this caſe, eſpecially, avoid wetting the *ſhanks* of the plants much. It will be known when water *muſt* be given, by the larger leaves flagging, without any violent ſun to occaſion an extraordinary perſpiration. Bottles of water may be kept in the frame, which is preferable to that warmed at a fire; yet the latter muſt be uſed when there is not enough of the former, to water ſo widely and deeply as neceſſary. When the frame gets full of *vine*, it gets full of *root*; and as by this time the days get long, and may be ſunny, a good portion of water for the whole may be wanted twice, or, perhaps, thrice a week, from a watering pot.

Air ſhould be given (as before directed) in *fine* weather to a tilt of three inches, or more. While there is a *briſk* heat in the bed, give a little air on *nights*. If the bed gets cold, it may be helped by *covering* up earlier and warmer, and uncovering later; though the plants

plants ſhould not be deprived of more *light* than what muſt be, through bad weather.

In caſe of *burning* being diſcovered, take the burnt mould from under the plants carefully, but quickly, as far as can be, without throwing them down: remember to be cautious of *ſteaming*, and think of *lining* (180) in time, that the plants be not ſtunted by cold, for when they are materially checked, they hardly ever recover it. Sometimes the application of linings will ſo increaſe the heat as to occaſion *burning*; let this be ſeen to, and (at leaſt) remove a part, and remake it when the violent heat is abated.

Earth up the ſhanks with *dry* mould, (kept in the frame on purpoſe) as the plants increaſe; and let warm *mould* be added to the ſides of the heaps, as ſoon as ever the roots begin to appear through, or the runners need ſupport; proceeding thus, from time to time, till the bed is filled up level all over. For this end, keep bringing in a little cold mould frequently, laying it round the ſides of the frame. When the bed is filled with mould, it is a good way to *preſs* it tightiſh round the frame, about a hand's breadth, to keep the roots longer from the outſide.

Some *gardeners* mould the bed all over, as ſoon as they are ſatisfied there can be no more *burning;* but it is beſt to do it at ſeveral times, and *not* ſooner than is neceſſary to cover the roots, and ſupport the runners; becauſe, where the mould lies thin, the heat comes up better to warm the air in the frame, for the leaves will want warmth as well as the roots.

Train the runners cloſe down regularly with neat pegs, as they proceed in growth, and prune the *tendrils* off as they appear, but take care not to *break* any of the leaves. When the days get long, and prove very ſunny, the *ſhade* of a ſingle mat, for two or three hours in the middle of the day, will be proper, as ſuppoſe from eleven to two.

Thus

Thus very *particular directions* have been given, but ſtill much will depend upon *circumſtances*, and diſcretion muſt direct. Let it be remembered, no *neglect* will be borne with. If any imprudent perſon ſhould lift the lights high, to pry into the bed in improper weather, perhaps an early tender crop might at once receive their death blow, though expoſed but a very ſhort time. Succeſs in raiſing cucumbers and melons *chiefly* depends upon keeping the bed in *due temper*; the plants being neither burned nor chilled.

Setting the fruit is the practice of moſt good gardeners, as generally inſuring the *embryos* from going off, as they are apt to do at an early ſeaſon; when not much wind can be ſuffered to enter the bed, and no bees or inſects are about, to convey the *farina* from the *male* flowers to the *female*. The *male* flowers have been ignorantly called *falſe bloſſoms*, and ſo have been regularly pulled off (as ſaid) to ſtrengthen the plants, but they are eſſential to *impregnate* the *female* flowers; i. e. thoſe that ſhew the young fruit at their baſe: This impregnation, called *ſetting* the fruit, is artificially done thus:—

As ſoon as any *female* flowers are fully open, gather a newly opened *male* flower, and ſtripping the leaf gently off from the middle, take nicely hold of the bottom, and twirling the top of the male (reverſed) over the center of the female flower, the fine fertilizing duſt from the male part will fall off, and adhere to the female part, and fecundate it, cauſing the fruit to keep its colour, ſwell, and proceed faſt towards perfection. This buſineſs of *ſetting* the fruit may be practiſed through the months of *February*, *March*, and *April*, but afterwards it will not be neceſſary; for the admiſſion of ſo much *air* as may afterwards be given, will diſperſe the *farina* effectually; but if the weather ſtill is bad, or remarkably calm, ſetting may be continued a little longer. If ſhort of male flowers, one of them may ſerve to impregnate two females. Pull off all the male flowers as faſt

faſt as they die upon the vines. Lay a bit of tile, or ſome ſuch thing, under forward fruit.

Something of *pruning* may perhaps be neceſſary, for plants will not bear well, either in quantity, or quality, if the frames are *crowded*. The rule (of courſe) is, to cut out thoſe runners that can be beſt ſpared, as being weak, moſt in the way, or having the ſmalleſt fruit on them. But as the fulneſs is generally owing to the putting in the bed too many plants, the better method is to cut down to the root a *whole* plant; and that in *time*; i. e. on the *proſpect* of being too full of vine: this may ſeem a great ſacrifice, but it will prove a profitable one. Let the diſcharged plant lay a day to wither, that it hang not hard to the others, and break their leaves, in drawing it out while freſh. About *Midſummer*, the frame may be raiſed, to permit the runners to ſtrike out, and in a fortnight after taken entirely off; though once in a frame, and always in, is better, if convenient.

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A SECOND CROP of *cucumbers* may be ſown at any time between the middle and end of *March*, if they are to be brought up in *frames*; but if under *hand-glaſſes*, or *paper covers*, then any time from the beginning of *April* to the middle, is ſoon enough, at leaſt in *Northamptonſhire*. A hot bed for ſowing the ſeed at this time, need only be from two and a half to three feet thick, and a one-light frame. On this bed alſo may be ſown, in pots, or otherwiſe, *tender annuals*; and it is a very good time for moſt of them. Or the ſeed for plants to ridge out under hand-glaſſes, may be ſown in pots, and placed in other hot beds, to bring them forward till they have been ſtopped.

What *has* been ſaid about making hot beds, and ſowing, and managing cucumbers, will direct now; only at this ſeaſon, mowings of *graſs* may be put round a bed to increaſe the heat, and will be found uſeful to lay on the top of dung linings when ſunk.

A *ſeed*

A *ſeed bed*, at this time, ſhould have a growing heat for one month, when the plants will be fit (the latter end of *April*, or beginning of *May*) to put either into another two feet and a half hot bed with a frame, or only under *hand-glaſſes*, &c. which ſhould be rather large, becauſe plants running from under them much before *Midſummer* will hardly endure the weather. Let them be covered up on nights with a ſingle mat; and when they *muſt* run from under the glaſſes, ſticks, or hoops, may be fixt to keep the mats off from preſſing upon them: faſten the covering down at the corners with pegged ſticks, to keep them from blowing away. Let the ground about the bed be ſtirred, and alſo raiſed, to train the plants level, and to give the roots full room to ſtrike freely.

For *ridging* cucumbers, that are to have only hand-glaſſes, or ſome ſuch cover, obſerve (as adviſed) not to ſow too forward, for better be rather late, than have the plants cut off, or much injured, juſt as they are going to bear. The hot bed, or *ridge*, made in *May*, for hand-glaſſes, ſhould be ſunk in a dry ſoil, two ſpades deep; and two feet and a half thick of good dung is now enough. The mould that is thrown out (if it is good) may be uſed to cover the bed; and if but indifferent, may be laid round it, or on it, towards the outſides. Lay on it at firſt only three inches of mould, except where the plants are to be, at which place lay a depth of about nine inches, rather more than leſs. It is not neceſſary that the earth ſhould be *very* dry, as directed for early cucumbers, but let it be warm firſt to plant in. If it be *Mid-May* before the plants are put out, *holes* of two or three barrows full of dung will be ſufficient to bring them on through *May*, and then the ſeaſon (if it is not bad) will be warm enough to keep them puſhing forwards. There ſhould be near four feet diſtance between each ſet of plants. Shade them for a few days at firſt putting out, and cover on nights till *Mid-June*.

Cucum-

Cucumbers not ſown till the beginning of *April*, may be brought to bear fruit on *one* good bed, if under a large frame; and ſuch a bed would, at the ſame time, ſerve very well to ſow, or to prick out, *tender annuals*. See ſection 18, *On flowers*.

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A THIRD CROP of *cucumbers* may be ſown any time, from the middle to the end of *May*, (or even a little later) either in a pot or not, upon ſome hot bed in uſe, to grow for a week or ten days; or ſow upon a little heat of two or three barrows full of warm dung, trod cloſe, and previouſly thrown together for the purpoſe: or if freſh and moiſt from the ſtable, it will, though at preſent cold, heat itſelf. Cover the dung with ſix inches of mould, and *ſow* half inch deep, and half an inch aſunder, under a hand-glaſs; and when the plants are completely up, thin them to an inch aſunder, where let them grow, earthing them up as they get tall, till they ſhow rough leaf. Then prepare more ſuch little bodies of heat to plant them out upon, three or four in a patch, which cover with a hand-glaſs, or otherwiſe, and ſhade alſo for a day or two, if ſunny. If you can take three or four plants up together by a ſcoop trowel, with earth to the roots, the better; and if not, plant them pretty near together, laying them aſlant, ſo that the ſhanks be covered two or three inches. Keep theſe plants earthed up, and as much under their covers as may be, till towards *Midſummer*, covering the parts that run out on nights till this time. The *third* crop is that generally ſown for *picklers*. Guard againſt the ſpot by a mat cover in *September*.

Sometimes, at this ſeaſon, cucumbers are ſown for *picklers* in *cold* ground, eſpecially about *London*, or *ſouth* or *weſt* of it; but ſoil, ſituation, and ſeaſon, make a *great* difference in the cultivation of all, and particularly of delicate plants. If any ſeed be ſown on cold ground, let it be in dry weather; give them a favour-

able

able ſituation, and ſow in *patches* eight or nine ſeeds in a hole, formed like a ſhallow baſin, covering half an inch deep; and if covered with hand glaſſes, to bring them up a little while, it were much better. Thin them when getting into rough leaf, to four or five of the beſt plants; ſpread them a little, and earth up to the ſeed leaves, giving a little water; and if, afterwards, the number of plants is reduced to three, it would be better than more. Give plenty of air by day, and a little on nights. Raiſe earth above the ſhanks as they grow, and let it lie about them, while the plants are ſmall, in the form of a ſhallow baſin.

As to ſaving the *ſeed* of cucumbers, as it is of ſome conſequence to be *aſcertained* of a good kind, when the *early* nature and approved quality of any ſort is known, it ought to be an object to ſave it *well*; which will be beſt done from plants of the *ſecond* crop, that have been ridged out, i. e. brought up under hand glaſſes. From this crop *that* plant which ſhews fruit firſt (under the ſame culture) ſhould be reſerved for ſeed, judging that its early diſpoſition may be continued, and becauſe the *firſt* fruit of any kind (if uninjured) always produces the beſt ſeed.

Fix upon *handſome* fruit, and prefer that which is placed loweſt, or grows neareſt the root. Leave no more than *one* fruit for ſeed upon a plant, and let it remain on the vines through *Auguſt*, or as much longer as the weather will permit, to be very ripe: when cut off, place ſeed cucumbers againſt a *ſouth* wall, till they appear decaying,

Being got *rotten* ripe, ſcoop out the pulp and ſeed into ſome veſſel, and ſtir it well up, which repeat for ſeveral days; then let it be waſhed in two or three waters, which will ſeparate the pulp, and leave the ſeed clean: ſpread it thin for two or three days, that it may *dry* thoroughly, and putting it up in paper for uſe, keep it in a place free from damp. Let it be every now and then

examined

examined and rubbed in a dry cloth, and it may be kept for ſeveral years.

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OF RAISING MELONS.

See Melon *in the next Section.*

MELONS are raiſed much in the ſame way as *cucumbers*. They ſhould not, however, be thought of ſo early, and from the middle of *February* to the middle of *March* will (for moſt perſons) be ſoon enough to ſow them. The place where they are cultivated ſhould be *well* ſheltered, ſo that winds may blow over the frames, as mentioned in the directions about hot-beds. They require a ſtronger ſoil to grow in than cucumbers, and more heat, both at bottom and top, and need leſs water: they take up more room, ſo that one plant, or at moſt two, will be enow under one full ſized light. Cucumbers may be raiſed on a *ſeed bed* till fit to plant out on the *fruit bed;* but melons will (generally at leaſt) require an *intermediate* bed. During the whole time of the cultivation of melons, (till high ſummer) they muſt have a *lively* bottom heat, in order to bring them forward, and ſucceed well; and, if melons are *late*, as ſoon as *September* enters, a lining of hot dung may be put to the bed, to afford ſome degree of heat to the outer roots, as an equivalent to the failure of the ſeaſon. Melons never do well in a ſhady ſummer. As *cucumbers* are about three months coming in, ſo *melons* are about four. They ſet their fruit in about two months, and are about the ſame time in ripening, though forty days will ſometimes effect it.

The *ſeed* of melons (procured from well ripened and fine flavoured fruit) ſhould be about four years old, though ſome prefer it much older, as judging it ſo much the leſs likely to run to vine: If it is *too* old, however, it

it comes up weak, and is apt to rot, when the mould is not ſufficiently dry, and the ſeed bed not very warm. If *new* ſeed only can be had, it ſhould be carried a week or two in the breeches pocket, to dry away ſome of the more watery parts: The *earlier* the ſeed is ſown, the older it ſhould be. Melon ſeed may be ſown in a cucumber bed, that is in a briſk heat, in pots plunged towards the middle; but a bed ſhould be ready to move the young plants into before the cucumber bed gets too cool. *Sow* only three or four ſeeds in each pot, and cover a little more than half an inch: The earth in which the ſeed is ſown, ſhould not be ſo ſtrong as that in which the plants are to grow for fruit. When the ſeedlings are three or four days old, take them up carefully, ſo as not to break any of the roots, and either plant one in a ſmall pot, or two in a little bigger; but depend on no plants which do not appear healthy and ſtrong. Sow a few ſeeds every four or five days, leſt accidents happen to deſtroy the firſt plants.

As *melons* require ſkill, and occaſion trouble to raiſe them, the greateſt poſſible care ſhould be taken that the *ſeed* is of a good kind. *Melons* ſhould never grow near *cucumbers*, eſpecially if for ſeed, as the farina of the cucumber may impregnate the bloſſom of the melon, and give it a watery flavour, or quite alter the nature of it: Do not ſow foreign ſeed, except for experiment.

Though *melons* may be ſown in a cucumber frame, that is in a good heat, yet rather make a *ſeed bed*, of about three feet thick; and having put on the frame and light, tilt the glaſs a little, and when the great heat is abated, put on ſome dry, rich, and fine, but not very light earth, to the thickneſs of four inches all over; and the next day, if the mould is not *too* hot, ſow the ſeed ſome in the beds, and ſome in pots, placed juſt in the middle, which may be drawn up out of the way of any *burning* heat.

When the plants appear, give them *air*, and beware of rancid *ſteam* from the glaſſes dropping on them:

They may be wiped with a woollen cloth, or turned to dry in fine weather. Conſider what was ſaid about *cucumbers*, concerning too much heat, too little, &c. After the melons have been up two or three days, (as was ſaid before) let them be potted and plunged to the rims, towards the middle of the bed; and the next day, a *little* water (warmed in the bed) may be given the *roots;* or a little may be given at the ſame time, if the mould is quite dry.

As ſoon as the plants are *potted*, think of making a *ſecond* bed, to be ready in a week, ten days, or a fortnight, (as circumſtances dictate) that ſo the young plants may receive no check through a decline of heat in the bed where they are. This bed ſhould be ſtronger than the ſeed-bed, and rather for a two-light frame; and being moulded as ſoon as it can be, not to burn, ſet the pots in, about an inch deep, and in a day or two draw a little mould up round them, and ſo on again. But if the firſt bed is warm enough to hold the plants longer, the heat of this ſecond bed (if violent) may be ſuffered to evaporate a little more firſt. Here they are to grow till in the ſecond rough leaf, when the plants ſhould be *ſtopped*, as was directed for cucumbers.

The *third*, or *fruiting bed*, is to be (obſerve) *ready* by a few days after the time of this ſtopping the plants. It ſhould be a *ſtrong* bed, of four feet thick, and for a three-light frame, and made the higher, the more ſtrawy the dung is. *As* ſoon as the burning heat is ſufficiently abated, let the bed be covered all over with good dry melon mould (the beſt is a rich moderately ſtrong *loam)* three or four inches, and heaps made under each light of about fourteen inches depth. Melons do not fruit well in a light mould, but yet it ſhould not be a heavy one. If the mould is thought too light, let it be preſſed a little together to give it conſiſtence.

To a freſh *maiden ſoil*, or good earth from the kitchen garden, that is known to be in heart, (by the ſtrength of the plants it has produced) add about one fourth, or one

one third, of *well* conſumed *dung*, and it makes a good *compoſt*, but it muſt be completely incorporated by frequent turning and expoſing to ſun and air, and kept by ſome means dry, as under a ſhed, &c. as directed for cucumbers. Much depends on the melons growing in a *good* ſoil, and rather a ſtrong one.

The *planting* of melons takes place as ſoon as the hills of mould are warm through; only if a violent heat is in the bed a day or two's delay does not ſignify, if the plants are doing well where they are; yet the roots muſt not be cramped longer in the pots than neceſſary. Melons require a greater depth of mould to grow in than cucumbers, and the bottom of the roots, at planting, ſhould not be nearer than five or ſix inches from the dung. Shade them from much ſun, till they have taken root.

If the *lights* are ſmall, one plant under each is ſufficient, and if large, let there be only two; for melons require much room. It is a great error in the cultivation of melons not to allow it them. Earth the plants up with *dry* mould about the ſhanks as they proceed in growth, and bend them *gently* down with pegs, to give them a regular and ſnug direction all over the bed. When *fruit* is ſet, there muſt be only one of the large, and two of the ſmall ſorts, (fair and promiſing) left on each principal runner, and this runner ſhould be pinched off at the ſecond, or rather the third joint above it, which is called *ſtopping*.

Pruning is neceſſary, in order to ſtrengthen the bearers, and keep the frame from getting too full of vine, i. e. let all *very* ſtrong, and all *weak* ſhoots be taken out, as alſo the *tendrils*; but take care that too many *male* bloſſoms are not thus cut off, for the weak ſhoots (if not abundant) do no great harm: As in other plants, ſo in melons, it is the middling ſhoots that bear fruit the beſt.

Train the branches all regular *(in time)* with neat pegs, for it hurts melon plants to lie rude, and to have

their leaves diſturbed or damaged, to put them in order. A piece of tile, or a ſmall earthen plate, under each fruit, is proper, to keep it from the damp mould, and to aſſiſt its ripening by reflected heat. Three (at the moſt four) melons are as many as ſhould be left to grow upon one plant; and thoſe are beſt which are ſituated neareſt the ſtem, as remote ones are not ſo well nouriſhed. Do not let a great deal of vine grow below them, leſt they be too much robbed, and let them be *ſtopped* as before directed, for when there is a great length of vine above, nature puſhes towards the extremity, and paſſing by the fruit below, forms more above, ſometimes to the total loſs of the firſt ſet fruit.

Keep *mould* round the ſides of the frame, to earth up the plants to the very leaves, and round the hills, (a little at a time) as the plants increaſe, and do not earth all over the bed before it is neceſſary; for full earthing at firſt is apt to occaſion burning, and afterwards to damp the heat of the bed too much, diminiſhing alſo the warmth of the air about the plants. When the bed is earthed all over, *preſs* the mould all round the ſides of the frame, about ſix inches wide, to make it firm, that the roots may not get too ſoon to the wood, and mat too much againſt it, which occaſions ſicklineſs.

Do not think of cultivating *early* melons, without plenty of dung both for beds and linings. The particulars of management, concerning *covering*, *ſhading*, *air*, *lining*, *ſtopping* the young plants, *ſetting* the fruit, &c. and to guard againſt *burning* and *ſteaming*, may be ſeen in the directions already given for *cucumbers*; only leſs *air*, and much leſs *watering*, will do for *melons*. Keep them cloſe ſhut down on nights, when the heat of the bed is become moderate, and cover well. As melons, therefore, are kept rather *dry*, they ſhould be ſhaded a little in *very* ſunny weather by a ſingle mat, for two or three hours in the middle of the day; i. e. when the ſeaſon is forward, eſpecially, if the bed itſelf be in a hot ſtate.

Melons

Melons may be *watered* moderately once a week, in fair weather, or twice if ſultry, eſpecially if the mould is light. Early in the ſeaſon, water a little before noon, and in high ſummer a little before evening. When the fruit is *ſetting*, and when getting towards *ripening*, very little water muſt be given: be ſure to water the *extremities* of the roots, but avoid the *ſhanks*, particularly while the plants are young. A little ſprinkling all over the leaves, when the plants get big, (but let not a hot ſun ſhine upon them at the time) will greatly refreſh them, when it is not thought proper to water the roots thoroughly, on account of the bed being cool. Becauſe much wet is certainly injurious, ſome gardeners keep their melons exceeding dry; but their leaves ſhould not ſhew *too* much ſign of drought, leſt the fruit ſhrivel for want of moiſture. Take care that the heat is kept up at the *ſetting* of the fruit, or it will become yellow, and fall off. Preſerve a good bottom heat till about *Mid-June*.

Melons ſhould not be *turned* ſo much about, as is the practice of ſome gardeners, in order to ripen the fruit all over; for it hurts the *foot-ſtalk*, diſtorting its veſſels that feed the melons, and ſo preventing a proper digeſtion of the juices, and ſome increaſe of ſize.

The *flavour* of a melon being preferable to the ſize, is the reaſon why water is to be withheld (as much as can be) when they are *ripening:* with it they will become bigger, and ſo appear finer; but what is quantity without quality?

The young *fruit* need not be fully expoſed to the ſun; it had better be a little covered with leaves, for much hot ſun hardens the ſkin, and prevents its proper growth. When a melon has nearly attained its ſize, *then*, however, a full ſun is neceſſary to ripen it.

As to *cutting* the fruit, if it is to be ſome days before a melon is eat, (as when carried to a diſtance) it ſhould not be quite ripe. Its *ripeneſs* is known by the high colour, and ſtrong odour, and the cracking of the foot-

ſtalk; and if they give not a full and pleaſant *ſcent*, they will not prove good. Always cut melons in the *morning*, and if fully ripe, they ſhould not be kept more than two or three days. If a melon is cut *before* it is ripe, ('tis ſaid) it may be ripened, by wrapping it cloſe up in cloth, and placing it in a heap of warm horſe dung for twenty-four hours. But the better way would probably be, to treat them as unripe *medlars*, which article ſee, in Sect. 17.

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A SECOND CROP of melons is to be had, by ſowing (in any other hot-bed, or one made on purpoſe) from *Mid-March* to the beginning of *April*, according to ſituation, as in a favourable one the ſowing may be ventured on the later. Theſe muſt be brought up as before, till *ſtopped*, and then ridged out; i. e. when about a month or five weeks old. The method of which ridging is, to make a *trench* in the ground four feet wide, and deep according to the ſoil: If the ground is dry, it may be from a foot to two feet deep, or otherwiſe but a few inches. Lay in *hot* dung full two feet and a half thick, being well ſhook and beat together with the fork. This trench muſt be of length according to the number of plants deſigned to be put out. For each hole (which ſhould be full four feet aſunder) put on good melon earth, laid up in a round hill, to fifteen or eighteen inches high; and then lay the earth, thrown out of the trench, to the ſides and top of the bed, about three or four inches thick, breaking it fine, and cover all over with mats to draw up the heat: But never expect *ridged* out melons (particularly) to do well in a light ſoil. When the earth is warm, put in the plants, two in a hole (or only *one*) giving a little warm water, and cover with large hand or bell glaſſes, or oiled paper lights, and proceed to manage according to that *dirrection* which the directions already given about *melons* and *cucumbers* have inculcated.

As

As the bed ſinks, and the roots ſpread, take care to add a good thickneſs of mould around the hill, for the plants to ſtrike into, and to keep them up: This may be put in a week or ten days, and it will keep out cold air and wet from the dung: but it is beſt not done at firſt. When the plants ſpread to the extent of the bed, the ground about it ſhould be dug over, and rotten dung buried to raiſe it to the level of the bed; but, perhaps, this work has been ſuperſeded by the neceſſity of a *lining* to throw in heat.

If the plants are forward enough to *ridge* out in *April*, or *beginning* of *May*, it may be proper to make theſe beds on the level ſurface, or nearly ſo, for the ſake of *lining*; but if later, they may be ſunk as directed above, or deeper ſtill, in a dry ſoil. Remember, it will be neceſſary to *line*, if there appears any *likelihood* of a want of heat, before the fruit is *ſet*, and got a little forward. Do it in time.

If two *ridges* of melon plants, let there be four feet (or more) of alley between them, and then a lining may be applied of that width to heat both beds; and this *middle* heat may be made uſe of to raiſe plants for the third crop of *cucumbers*, or tender *annual* flowers, *purſlane*, &c. Give ridged out plants *air* on the *ſouth* ſide. They will need more *water* when in the ridges than in frames, and give it wide, but little about the ſtem, or hardly there at all; nor let it be applied cold, though a ſmall degree of warmth from the *ſun*, or otherwiſe will do. This crop need never be ſhaded but when the leaves hang. When the plants cannot be contained under the glaſſes, let them be carefully trained out, and covered with mats all over on nights, and on days, in bad weather, till *July*, particularly if much *rain* falls.

With large *oiled paper frames* this work of the *ſecond* crop of melons may be very well managed. The plants ſhould be kept under hand glaſſes till too big for them, and then the paper lights may be put on, which containing the runners till high ſummer, they will be ſafe.

Yet these covers, being set upon bricks, may be kept always on; but let the *fruit*, that happens to be without side, be covered with a *hand glass*, which will help to ripen it. Let the lights be protected in heavy rains, by laying some cloth, or mat, over; and towards the *close* of summer, guard the plants well against much cold on nights.

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A THIRD CROP of melons may be sown (in favourable situations) towards the end of *April*, or beginning of *May*, if the former crop was sown about *Mid-March*, and this is to be proceeded with in the same manner as the second. When *September* comes, (as was observed) late melons must be preserved, as much as possible, from *cold* and wet, that they may ripen. To this end, *glazed frames* may be used over all, or at least *hand glasses* put over each fruit, covering warmly up with mats on nights. Those melons that do not ripen may be used for *mangoes*, and make good ones.

SECTION XV.

OF ESCULENTS.

THE USEFULNESS of esculent plants, as serving for the *food*, *health*, and *pleasure* of man, is pretty generally acknowledged; and that they may not fail to answer these ends in the best way, let them have every attention; and that, not only in their cultivation, but in their *preparation* for the table. Let there be no slight put upon the bounty of PROVIDENCE in ordaining

ing them to our uſe, by an unneceſſary preference to other foods. "There was a time, when bread and herbs (with a little fruit) were the only dainties wherewith the tables of the greateſt voluptuaries were ſpread."

"Vegetables and fruits were our innocent, primitive, and natural food; but men's depraved appetites have ſubſtituted the ſhambles; yet, after all, the inventions of the moſt luxurious and voluptuous *epicure*, the moſt *Cæſarian* tables would want of their magnificence, noble guſt, and grateful reliſh, without fruit and the productions of the *garden*, which gives the true condiment, and moſt agreeable cloſure to all the reſt."

"Their uſe is, all our life long, of that univerſal importance and concern, that we can neither live nor ſubſiſt in any plenty, with decency or convenience, or be ſaid to live at all without them: whatſoever contributes to delight or refreſh us, are ſupplied and brought forth out of this plentiful and delightful ſtore of the *garden*."

Let it be a rule to *gather* vegetables of all kinds (deſigned for the table) in the morning, before much *ſun* has ſhined on them, and lay them by in a cool place till wanted.

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ALEXANDER is a culinary plant, formerly much uſed, but has given way to *celery;* like which it is *blanched* (about a foot high) for uſe in ſoups and ſallads. The ſeeds are beſt ſown in drills two feet aſunder, and thinned to ſix or eight inches diſtance, though they may be ſown at broad caſt and tranſplanted. Spring ſown plants come in for autumn, and autumn ones for the uſe of ſpring.

ARTICHOKE, there are two kinds of, the *globe* and the *conical*. The latter is the hardieſt, but the former is generally preferred, both for ſize and flavour. Artichokes are propagated from rooted ſlips, or offsets in

April, taken from the mother plant, by drawing the mould aſide. As they require a rich ſoil, and are ſtationary plants, dig a good quantity of dung in completely *below* the roots for them to ſtrike into, breaking the ſoil well with it.

The *head* of the artichoke is valuable according to its ſize and ſubſtance, and therefore to a good ſoil, add good *room:* for though they *may* be planted nearer, yet they would do much better in rows ſix feet aſunder, and three feet apart in the rows. Between theſe rows may be propagated ſeveral ſorts of ſpring or early ſummer crops. They will reward the trouble of being regularly *watered* in dry weather; ſuffer them to bear only *one* principal head. *Freſh plantations* ſhould be made every third or fourth year, to have them in perfection. Every year that they ſtand after planting they ſhould be dug deeply round, and ſome well conſumed manure applied. Cut the heads when the leaves begin to expand, and before the center opens for flowering; and let them have about a foot of ſtalk, breaking the remaining part of the ſtem down to the bottom, that it may not rob the root by a waſte of ſap. At the *ſpring* dreſſing, all the ſuckers are to be taken off, leaving three only of the ſtrongeſt ſhoots to fruit. Thoſe without roots will grow by planting deep, and keeping moiſt.

Let the plants be *protected* from *hard froſts*; at the proſpect of which, cut down the ſtalks and outſide leaves to the inner ones, dig between, and earth the plants to near the tops; and if ſevere weather follows, they ſhould be covered thick with ſtraw, which muſt be removed when the froſt goes. The earthing-up need not be levelled down till *March*, or may be let alone till the time of their dreſſing, which is beſt done at the beginning of *April*. If uncovered early, let the litter lay by ready in caſe of froſt to cover again.

To have a long *ſucceſſion* of artichokes, ſome ſlips ſhould be planted at two different times *every* ſpring, as

as they bear the ſame year, only come in later, and with ſmaller heads than the old plants. If being planted late, they do not produce in the preſent ſeaſon, they come forwarder the next ſummer than old ſtools do; but remember, a good ſoil and open ſituation are abſolutely neceſſary for the *artichoke*. 'Tis of ſervice to lay graſs mowings, or ſome litter, about the roots to keep them cool; for though artichokes ſhould not be planted in a moiſt ſoil, on account of froſt, yet they thrive beſt in a cool one. Artichokes that come *late*, may be cut with their full ſtalks, and being laid up to the head in moiſt ſand, in a cellar, will keep a month, ſo that they may ſometimes be had at *Chriſtmas*.

ASPARAGUS, there is (in fact) but one ſort of, as an eſculent; but ſome difference occurs as to ſize, colour, and flavour, ariſing from cultivation. In order to obtain large heads, and to have the beds continue to produce the longer, *much* dung is uſed; but the leſs of it, the ſweeter will this vegetable be, ſo that in a ſoil naturally prolific, no dung need be uſed.

Aſparagus *beds* are commonly made from *plants*, but the preferable way is from *ſeed*, the beſt of which is the *Graveſend* ſort. The time for both is *March*, rather early in the month than late, though the beginning of *April* may do. The plants ſhould be only a year old, and ſet in rows a foot diſtance, and the roots the ſame, or a little leſs in the rows.

Making the *beds* four feet and a half wide, there will be four rows of plants, and nine inches left between the outſide rows and the alleys, which ſhould be two feet wide. The beds ought to be trenched *full* eighteen inches deep, and enriched with dung that is well conſumed, burying it *below* the roots; they will ſoon ſtrike into the dung, which had beſt not lay immediately about them. If ſome mould of rotted *vegetables*, or wood pile earth, in the ſtronger ſoils; and a little pond mud in the lighter, were mixed with the top ſoil, it would greatly help the plants; or if none

other manure than a mixture of all theſe were uſed through the whole work, it were better. As aſparagus beds are deſigned to laſt many years, (ſuppoſe twelve or fifteen) no pains ſhould be ſpared to do the work *well;* and if the ground were prepared ſometime before hand, or in winter, it would be an advantage, the top ſoil laying trenched for the benefit of froſt. The *alleys*, as well as the beds, ſhould be made good, for the roots of the outer rows will ſtrike into them. A rich ſandy loam is the beſt ſoil for aſparagus, and if the earth is too heavy, or too light, rectify it. The ſtronger the ſoil, the higher the beds ſhould lie above the alley, and more rounded; and in very light ſoils they ſhould lie flat, or rather ſinking, to catch the rain.

To *plant beds* of aſparagus ſet the line nine inches from the edge of the bed, and cut the trench *upright*, cloſe to it, ſo deep that the crowns of the roots lie full two inches below the ſurface. If the mould of the bed lies light, and is likely to ſettle much, the crowns of the plants may come very near the top, and two inches of mould put on afterwards, which is indeed the beſt method of planting; but if the ground is not expected to ſettle, two inches of the top mould muſt (in this method) be firſt drawn aſide to cover with. The roots muſt be neatly ſpread againſt the trench, and cut as little as poſſible; i. e. only the damaged parts off. This ſhould be with a ſharp knife, and it would be better if done the day before they are uſed, that the ends may dry and heal. It is of conſequence to have the plants dug up *carefully*, with a three pronged fork, that the roots may not be injured.

To *ſow beds* of aſparagus, make little holes an inch deep, at the diſtance directed for plants, and having laid three fine ſeeds in each, near an inch aſunder, cover them three-fourths of an inch, which will leave little hollows, to ſhew their places, and give occaſional watering in a dry time, to fetch them up. If the beds were covered with a little haulm or ſtraw, till the

plants appeared, it would help them to germinate, as in a ſunny ſeaſon they are apt to lie long, eſpecially if the work be not done till *April*. And the plants are above ground fill up the holes. Refreſh the plants occaſionally with water through the ſummer, and when they are two inches high, thin the holes to one plant in each, and cover the beds with an inch of mould, and they will then be two inches deep, as was directed for plants. The *drawn* plants may be pricked out at four or five inches diſtance, to make good any deficiencies next ſpring, or otherwiſe; but if the plants are not wanted, it will be beſt to *cut* the ſpare ones off, which does not diſturb the roots of thoſe left. In *October*, when the haulm is decayed, cover the bed with about half an inch of rotten dung, to make them ſtrong and keep out froſt; and, in ſevere weather, put ſome long litter over all. In *ſpring*, take the litter off, and gently ſtir (with a proper fork) the rotten dung in: do ſo again the next year. Watering aſparagus beds with the draining of a dunghill (a rich manure too often loſt) in *autumn*, or *ſpring*, will waſh down to the roots, and greatly benefit the lower ſoil to the increaſe of the produce: It is worth while to make a rank dunged water for this purpoſe, to recover weak or old beds. See p. 53.

Aſparagus is *cut* from planted beds in three years, and from ſown ones in four; but this loſs of a year, will be amply repaid by the ſuperior ſize and abundance of the heads. If the buds come very fine, a *little* may be cut the year before. A *thin* crop of *onions*, or of *lettuces* to prick out, is commonly had on planted beds the firſt, and on ſeed beds the two firſt years, taking care that none grow juſt about the plants. The beſt method of doing this buſineſs, is by an intermediate *drill* between each row, and again acroſs them: It were better however to have no crop at all.

The *management* of aſparagus beds is, to cut down the haulm, within an inch of the ground, when it turns

turns yellow in *autumn*, clearing of weeds, ſtirring the ground, and covering the whole over with about an inch of rotten dung before every winter, which is to be forked in at *ſpring*, not to hurt the plants, and covered with ſome parings of the mould from the *alleys*, which ſhould afterwards be dug over, if no crop is in them to prevent it. It may ſeem, that an addition every year to the beds might ſink the crowns of the plants too low; but it is their nature to riſe as they grow. Beſides the rotten dung, as above, there may be laid ſome long litter over the beds, before ſevere weather ſets in; but the covering of aſparagus beds is not ſimply to keep out froſt, (which will not hurt them without much wet) but to keep them warm, that the buds may be forward at ſpring. A *ſtump* ought to be kept at each corner of the beds, to ſhew their bounds, and as marks to pare the alleys up by, which (generally) ſhould lay three or four inches lower.

The *cutting* heads of aſparagus ſhould be carefully performed, not to injure adjoining buds that are ſtarting up. Move the mould a little aſide to ſee, and then cloſe by the head, and with a little ſlope, cut it off about three inches below the ground. The knife ſhould have a long narrow blade, and a proper one is indented with teeth as a *ſaw*. It may be cut, when from two to four inches high; and let it be regularly done as ſoon as ready: If it is lain by in a cool place, as in a dairy or cellar, it will keep very well three or four days.

Six *rods* of well planted ground will produce, in the full ſeaſon, about a hundred a day; and this, as a rule will help to determine how much room a private family ſhould allot for this vegetable.

BEANS we have ſeveral ſorts of, differing in ſize, colour, flower, flavour, hardineſs, and time of coming in. Of the forward beans, the *mazagan* is generally preferred, as the earlieſt, hardieſt, moſt productive, and pleaſant. The *Portugal* ranks next to it. Of the later

later ſorts, the *Windſor* ſtands firſt, as to general eſtimation, for eating; but it is in moſt ſoils rather an idle bearer. The *longpod* and *Sandwich*, however, are preferred by ſome, chiefly as more fruitful. Trials muſt determine taſte; but it may be obſerved, that the *white bloſſom* bean is a very good one, if eat young.

Cloſe under a *warm wall* (to which they ſhould be kept by packthread) ſome *mazagans* may be put in the ground early in *October;* but at the latter end, and the beginning of *November*, is ſureſt, when they commonly ſucceed at ſome diſtance from the wall, *earthing* them up regularly as they proceed in growth. Crop the tops off as ſoon as the lower bloſſoms are full out, or begin to fade. This forwards them.

Put the *ſmall* ſorts of beans in three inches deep, and four aſunder, in ſingle rows; or ſix inches aſunder every way, in double rows; and let the rows, in the firſt caſe, be two and a half, and in the latter, three feet aſunder.

There is a *dwarf* bean (by ſome called the *fan-cluſter*) that grows but a few inches high, which is very convenient to put in, cloſe under a *ſouth* wall, in *October*, and they will thus be but a few days (if any) later than the *mazagan* ſown in *November*.

'Tis a good way to ſow *patches* of beans in a warm corner to ſtand the winter, placing them about an inch from one another, and *tranſplanting* them at the above diſtances, the firſt mild weather after *Mid-February* or in *March*, to any ſheltered part of the garden, and if under a *ſouth* wall (not too near) it will forward them, eſpecially if watered in a dry time. Beans, ſown in *patches*, may be eaſily covered in ſevere weather, by a *frame*, &c. Make *trenches* to lay them in when tranſplanted; pull not off the bean adhering to the roots, ſhorten them a little, and put them in rather highly covered over the ſhanks. If planted aſlant, they will ſoon get erect; but this is only permitted

mitted in caſe of a ſhallow ſoil, or long ſhanks and roots. If dry, give water.

In *ſevere weather*, a light covering of peas haulm, or any ſtraw, may be lain over winter beans to protect them, but muſt be taken off as ſoon as the weather alters; for too much covering of any thing is as likely to deſtroy (eventually) as being wholly expoſed.

Though the *mazagan* is moſtly the bean put in to ſtand the *winter*, ſome gardeners ſow other ſorts for the purpoſe, (even *Windſors*) which may ſucceed; but they certainly will not come in ſo early by near a fortnight, and muſt have a dry ſheltered ſituation. The *larger* beans muſt be ſown a little deeper, and two or three inches farther aſunder than the *mazagan*, allowing a foot more between the rows, eſpecially if double ones, which are beſt.

If *early crops* of beans *fail*, through ſeverity of the winter, be ſure to take the firſt opportunity of open weather in the new year, to ſow ſome of the early ſorts; and if they be covered over with ſome ſtraw, they will come up the ſooner; but remove the covering as ſoon as the beans appear, if not froſty at the time. Or if a hole be dug near a *ſouth* wall for two or three barrows full of hot dung, covered with ſix inches of mould, beans may be ſet very near one another, for planting out, cover the work with ſtraw as before, and thus time will be gained, eſpecially if the beans be ſoaked a day and night in a warm room.

Succeſſion crops of beans are to be ſown every three weeks, or a month, from *November* to *July*; preferring the larger ſorts in *February*, and ſo on to *June*, when the ſmaller (or early) kinds will be the propereſt.

BEET, there are four kinds of, *red*, *green*, *yellow*, and *white*, which are uſed ſeveral ways, as *pot* and *ſallad* herbs. The large leaves of the white and yellow are ſometimes *blanched*, when full grown, for the ſake of their thick ribs, being peeled for ſtewing, and eat as *aſparagus*, and called *chards*; ſome ſay the yellow

yellow is beſt, though the white is moſt commonly the ſort uſed. *Sow* beets in *February* or *March*, thinly, either in drills or broad caſt, and hoe them to a foot aſunder: They run to ſeed the ſecond year. A little alſo may be ſown, early in autumn, for late ſpring uſe; but they will be ſmall. The *red* ſort is cultivated for its *root*, and is preſerved in winter, in dry ſand, as carrots are; and of this there is a turnip ſhaped ſort, that ſuits beſt in heavy ſhallow ſoils, and a long rooted ſort proper for light and deep ones: Beets, but principally the red, require a rich ſoil.

BOORCOLE, or *cale*, is a hardy green, of which we have two principal ſorts, *green* and *brown*, and a little variety is in the leaf, as plain, curled, variegated: The latter is a pretty vegetable when growing, but not ſo hardy, or ſo pleaſant, at table as the other ſorts.

Some ſow two crops of this green at the end of *March* and of *April*, but one ſowing may ſuffice; and the firſt day of *April*, or at leaſt in the firſt week, is the beſt time. Sow in an open ſituation, and in cool ground, and thin the plants in time, that they may be robuſt, and able to ſupport themſelves.

This green ſhould be planted out in rows a yard aſunder, and two feet apart in the rows, having been previouſly pricked out from the ſeed bed, at ſix inches for five or ſix weeks, to obtain ſtrength for final planting in *June* or *July*.

Let boorcole, and all ſummer planted things, have a good watering at the time, and again in a few days, if the weather proves dry; and before winter let them be well earthed up to ſupport the plants from the wind and ſnow, that are apt to break them down, or at leaſt, to ſet them awry; which, when it happens, ſhould be attended to, to fix them upright again; obſerve this of all other winter greens.

The heads of boorcole may be cut in winter, and the ſprouts come full in ſpring; but the heads ſhould be froſt bitten firſt. The ſprouts ſhould only be topped

topped when gathered, and they will ſhoot out again below.

BROCCOLI is of two diſtinct kinds, the *purple*, and the *white*; for the *green*, &c. are only varieties from them; of each, there are large and dwarf ſorts, the latter of which is moſtly cultivated. All the ſorts, except the white, generally produce ſide ſhoots, as well as a head. The white is called *cauliflower* broccoli, becauſe it reſembles a cauliflower much, but is not ſo white. This is not ſo hardy as the purple, nor is it thought ſo good; perhaps the *green* may be eſteemed the beſt. Of the *purple* there is an early and a late ſort; the former is ſowed to come in at autumn, and the latter in ſpring.

The firſt day of *April* is a good general time to ſow for the *autumn* crop, (though ſome do it ſooner) and the laſt day of *April* for the ſpring crop. A little *white* may be ſown with the early autumn purple. But it will be very proper to ſow again a fortnight after each; and at the end of *May*, for late ſpring uſe; which, though they produce ſmall heads, will be very acceptable. Some gardeners ſow in *June*, or even the beginning of *July*. Do it in open ground, and ſee that the young plants are thinned, when quite ſmall, that they may not be drawn up weak; and prick them out when they have got ſix leaves, to ſix inches diſtance, where having grown to a proper robuſt ſize, (as about *July*) let them be planted out at two feet, or a little more, aſunder. The *autumn* ſort ſhould be planted towards a warm wall, leſt it come not in at the time. Broccoli requires a *rich* and dry ſoil; yet watering, in a dry time, is neceſſary to help their heads to ſwell, and forward them. Stir the ground about the plants occaſionally, and keep them well earthed up. The beſt *broccoli* ſeed comes immediately from *Italy*, whence we firſt had it; but it degenerates.

BRUSSELS SPROUTS are winter greens, growing much like *boorcole*, and by ſome preferred as more delicate

licate eating; but they are not so hardy or productive. Their culture is the same as boorcole, only they may be planted out at rather less distance.

CABBAGE, there is a considerable variety of, as to flavour, size, time of coming in, and hardiness. Some are for the use of the table, and others for cattle, though the latter are very sweet before they get solid. The early *dwarf*, or *Russian*, and early *Yorkshire*, are the chief sorts for spring use, and the early and late *sugar-loaf* as excellent for summer and autumn.

In *April*, the forwardest cabbages may be tied up, (as lettuces are) to assist them to head and whiten; a practice seldom seen done, but which will certainly be helpful: Use new wetted bass.

Sow for *early* spring cabbages about *Mid-August*; soon after they are up, thin them: in a month, draw the strongest, and prick them out four or five inches apart, where having grown about the same time, they will be fit to plant for spring use; or they may be put out any time after, even in winter; for should frost come directly, it will hardly affect them injuriously. Yet it is a good practice to let some remain in the *seed-bed*, at proper distances, where being well earthed up, (or in very severe weather covered a little) they will survive when those set out are cut off. Plants that are thought too rampant towards winter, may be pulled up, and planted in the same place again, *(November)* and will thus stand the frost better, and not be so likely to run.

Plant cabbages, if in a middling soil, two feet asunder, allowing six inches more for a rich one: There should, however, always be some dung dug into the ground; which not only increases their growth, but prepares the soil for future cropping. If they are planted at *half* the above distances in the rows, taking care to draw every other plant in time for *early* greens (or *coleworts*) it is a very good method, as the ground is better occupied, and the plants protect one another. See *Coleworts*.

The

The *late* cabbages, or thoſe of ſummer and autumn, ſhould be ſown early and late in the ſpring. For early ſummer uſes, ſow after *Mid-February* on a little heat, or under hand-glaſſes, on a warm border; the later crops in *March*, to the end of it; and for the lateſt at the end of *April*; when the ſmall *Ruſſian* ſort will anſwer beſt, and be delicate.

Sow *red cabbage* ſeed either about the middle of *Auguſt* or beginning of *March*; but as there is much more bad ſeed than good of this vegetable, be as careful of the ſort as poſſible; i. e. ſuch as will be ſolid, and of a deep colour.

CARROT, there is a little variety of, in colour, ſize, and time of coming in, though not much in taſte. We have *orange*, *red*, and *yellow*, but the former is generally preferred. The ſort ſown for the *firſt* crop, whether in cold ground, or on a hot-bed, is the early *horn-carrot*. Both this and the late horn-carrot grow ſhort and thick, and are therefore proper for heavy, or ſhallow ſoils, as the other ſorts are for light and deep ones.

Sow carrots always in good time, as the ſeed lies long in the ground, and they are, by many perſons, coveted early. A few ſhould be ſown in a favourable ſituation, the firſt tolerable weather in *February*, digging the ground *well* and deep for the purpoſe; for if it is lumpy, the carrots will grow forked, as they will alſo if the ground is freſh dunged.

Carrot ſeed ſhould be mixed with dry ſand, or earth, rubbing them well together, in order the better to ſpread it equally in ſowing. Uſe about twice as much ſand as ſeed, and if earth, it were better to be of a different colour from that on which the ſeed is diſtributed, that it may be ſeen.

If *early* in the month, the new ſown beds may be covered with a little haulm, or ſtraw, which will help the ſeed to germinate, and preſerve them from being thrown out of the ground by froſt; and this covering ſhould be continued on nights, and taken off by day, when

when the plants are up; which practice being continued for ſome time, will greatly forward, as well as preſerve, the crop. Some people ſow in *December* and *January*, if the weather is mild; but for this, (and other circumſtances in gardening) *ſituation* muſt, in a meaſure, govern, and diſcretion determine: In this caſe, cover the ground with ſtraw, as for radiſhes; which ſee.

If a *hot bed* be made for carrots, let it be about two feet and a half thick of dung, and covered with eight inches of ſifted mould, as ſoon as the violent heat is gone off. Sow the ſeed directly, a full quarter of an inch deep, and if covered with lights, give air ſufficient to keep the earth only juſt warm. A *hooped bed* to be covered with mats may do for this purpoſe, but in this caſe, two feet of dung may anſwer better than more; for if the ſeed is hurried up, they will be too tender for the protection of ſuch a covering, and the plants will run to top, and not bottom well.

Thin the plants ſoon to an inch aſunder, and in a little time again to three inches, in order to grow to a ſmall ſize for uſe; and if not ſo wanted, at any rate draw ſome equally, that thoſe which remain may ſwell properly: Carrots muſt have a great ſhare of air, if covered with glaſs.

The *principal* crop of carrots ſhould be ſown early in the month of *March*, or before the end of it, and be ſoon hoed, or thinned by hand, to a ſmall diſtance, and a while after to a greater; ſo that together with hoeing and drawing for uſe, they ſhould at laſt ſtand at from eight to ten inches diſtance, according to the ſoil. This may *ſeem* too much, but certainly carrots have, in common, too little room allowed them for attaining their proper ſize. Let the firſt hoe be of the breadth of three inches, and the ſecond of ſix. No conſideration ſhould prevail to let carrots ſtand too long before they are properly *thinned*.

A few

A few *late* carrots may be ſown in *April* and *May*, to draw young in the ſummer; and ſome in *Auguſt*, to ſtand the winter, for early ſpring uſe; but carrots that ſtand the winter grow hard, and are of very little worth, and that chiefly for ſoups.

In *autumn*, let carrots be taken up as ſoon as their leaves begin to change; for when they continue too long in the ground, they are apt to get worm-eaten, eſpecially in rich ſoils. Cut the tops off at an inch, and lay them up dry and free from mould, in dry ſand, a layer of ſand, and a layer of carrots. All thoſe that are broken, or cut, ſhould be thrown aſide for preſent ſpending, as they would decay in the heap, and ſpread infection to the reſt. Thoſe who grow large quantities for *cattle*, ſtack them in hovels, &c. with a thick coat of ſtraw, bottom and ſides, and particularly on the top. In a ſoil that ſuits them, carrots turn to good account, and are excellent food for *all* ſorts of cattle, but particularly pigs and horſes.

CAULIFLOWER is ſometimes diſtinguiſhed into an early and late ſort; though, in fact, there is no difference, only as the ſeed of that called early is ſaved from the forwardeſt plants.

The *time* for *ſowing* cauliflowers is rather a nice buſineſs, but it is generally ſettled for the 20th of *Auguſt*, a day under or over. It will be prudent, however, to ſow again a few days after, but not earlier, as then they would be apt to form only very little heads, and run up for ſeed. Let the young plants be timely *thinned*, that they may be ſtrong. *Prick* them out when the firſt leaves are about an inch broad. And as cauliflowers are tender, they will require to be pricked out in the warmeſt and drieſt part of the garden. Some of them ſhould be protected under *hand-glaſſes*, *frames*, or *hoops* and *mats*, ſhutting up cloſe, and covering the glaſſes with mats or ſtraw in ſevere weather: not doing this, however, before the weather makes it *neceſſary*,

and

and always allowing what *air* they will bear, especially towards spring, otherwise they may be disposed to *run*, or will be weak and sickly. Keep them free from dead leaves, and stir the surface of the earth about them. As the season advances, let them be wholly uncovered on fair days, and when they are got forward in *March*, draw the spare ones to plant out, leaving only a single plant under a small hand-glass, and two under a large one; or a few may be drawn out at the end of *February*, if the glasses are crowded. Continue the *glasses* on as long as they will contain the plants, *raising* them upon bricks. The number generally put under hand-glasses for the winter, is from three to five; and if the glasses are on *close* for a few days, it will help them to strike. Those drawn from these, make a good succession crop: But do not prick out, or plant, those that have *black shanks*, for they will come to nothing: Cauliflowers are liable to this defect chiefly in wet seasons. Slugs are apt to harbour about them, for feeding on the leaves, which see to, especially those in frames, and now and then stir the mould about them. The distance which they should be planted is from two and a half to three feet, according to the richness of the soil.

If the *autumn* sown plants are cut off, the earliest opportunity must be taken in the new year to sow some seed on a *gentle* heat, as in *February*, covering with glasses, or only with hoops and mats. From this bed, when it is cold, they should be pricked upon another, where let them grow till planted out to bear. And if those *weak* ones, that have stood all the winter, were pricked out early in the spring upon a little heat, covered with good mould, it would strengthen and forward them much. In default of dung, sow under hand-glasses in a warm border.

To have a *succession* of cauliflowers till winter, sow on a slight heat, or under glass, in *March*, for plants to follow the first crop; and again in open ground, about

the end of *April*. If *winter* ſhould overtake ſome of the latest plants, they may be taken up, when in flower, with a ball of earth, and planted or laid in a conſervatory, or a cellar, where they will ſwell their heads, and be ſafe for a month, or more. All the ſucceſſion crops, except the laſt, ſhould be planted in a *cool* part of the garden, not ſhaded.

Cauliflowers require a *rich* ſoil, and to be kept *moiſt* during ſummer, eſpecially when flowering, watering them well twice a week. If the water were *impregnated* with ſheep or other dung, to the ſtrength of about an ounce of ſalt to a gallon of water, it would help them in ſize, for cauliflowers are greedy feeders. The ground in which they grow can hardly be too full of dung; nor need there be any fear as to making them rank: a little ſalt thrown in the water, is, however, cleaner, and does away the idea of rankneſs. When they are watered, the earth may be drawn from the ſtems, and put to again. As ſoon as the *head* appears, break down one or two of the middle leaves over them to protect from the weather: It preſerves them white and cool, and encreaſes the ſize. This ſhould be particularly practiced with *Autumn* heads, leſt wet or froſt ſpoil the flower.

Celery we have three or four ſorts of, as the common *Italian upright*, both *hollow* and *ſolid*, with the *giant* hollow, and *turnip rooted*, or *celeriac*.

For *early* celery, ſow in the laſt week of *February*, or firſt in *March*, on a gentle *hot bed*, or in a warm rich border, under a *hand-glaſs*, or not. When cultivated ſo early, it is apt to run, but if only a few plants ſtand tolerably, it is worth while to try, and even when in a pipy ſtate it does for *ſoups*. Sow *thin*, cover ſo, and keep the earth moiſt; for the ſeed is ſlow in coming up if dry weather.

For the *principal* crop, ſow at *Mid-March*, and a late one again at *Mid-April*; or for a few late plants.

For

A little ſeed may be ſown at the beginning or even latter end of *May;* and if the ground is covered with a *mat*, it will help the ſeed to germinate, by keeping the earth cool, and from a drying air; but it muſt be taken off and the ground lightly watered, as ſoon as the plants appear. If the weather ſhould be very ſunny, ſhade the young plants a little for a few days, by raiſing the mat, or laying ſome bruſh wood over.

Prick out the plants in moiſt weather (if poſſible) when two or three inches high, at three or four aſunder. Water them every other day for a week if dry weather ſucceed.

Plant celery when ſix inches high, in *trenches* a yard diſtant, and ſix inches from one another. In a light ſoil, the trenches may be ſomewhat deeper; but generally near a ſpade's depth is proper, and a ſpade's width, keeping the walls firm and upright. Shorten long roots and high tops, and puſh off ſmall ſide ſhoots.

If the *ſoil* is not very good, dig in a little well-rotted dung at bottom; but the celery will be ſounder and ſweeter without dung; and though the plants will not come up ſo large, they will be hardier to reſiſt froſt. The *later* that celery is planted out, the ſhallower the trenches ſhould be; and when late, be the more careful to diſplace the ſmall ſide ſhoots.

Water celery at planting as at pricking out, and occaſionally afterwards in very dry weather, for it likes a moiſt ſoil, and will not grow large and tender in a dry, or light one.

Earth up the plants frequently (as ſuppoſe every week or ten days, in a growing ſeaſon) a little at a time, in order to *blanch* them, by which they become criſp, ſweet, and tender: The celery gets tough and rank, when this buſineſs is let alone too long. In earthing up, it is a good way to gather the plants cloſe (but carefully) with the left hand, uſing a trowel, or ſmall ſpade, for the purpoſe.

In ſevere *froſt*, lay ſome long, dry, litter over the tops, which remove when the froſt goes. In proſpect

of ſuch weather, take up ſome, and lay it by in dry earth under ſhelter for uſe.

Celleriac requires a rich ſoil, and ſhould have frequent watering to have fine tender roots. Plant in trenches about three inches deep, and earth up, (only once) when the plants are about three parts grown, to four inches height. This ſpecies is hardier than the others, and holds longer in ſpring; therefore, thoſe who like the ſolid root ſhould cultivate it.

The *ſeed* of celery, (in default of plants) if bruiſed, anſwers very well to give ſoup a flavour of it. *Parſley* ſeed, &c. may be uſed in the ſame way.

CHARDON is a gigantic vegetable of the *artichoke* kind, (now ſeldom cultivated) uſed ſometimes in *ſallads*, but chiefly in *ſoups*, or ſtewed, &c. Sow about the middle of *March*, and end of *April*, in trenches, four feet, or more, aſunder, a foot wide, and ſix inches deep. Drop the ſeed (which will be near a month coming up) a few inches aſunder, and thin them at laſt to the diſtance of from three to four feet. They muſt be watered in a dry time. Thoſe plants that are drawn may be taken up with balls of earth about them, and planted in trenched rows as *celery*, at the above diſtance, and the rows five feet from one another. The *leaves* only of this plant are uſed, after they are *blanched;* which is done by earthing two thirds of their length up, when about three or four feet high, tying neat hay-bands firſt cloſe round them, to within a foot of the top; i. e. blanch when they are full grown, in *Auguſt* and *September*, and in about ſix weeks they will be fit for uſe. In theſe months it will be well to water them regularly in dry weather, to prevent their ſeeding. In froſt cover the tops with ſtraw: It will aſſiſt the blanching to lay ſtraw, or offal hay, *cloſe* round them when tied. This plant is biennial here, but perennial in its native climate, *Spain*, &c.

CHOU DE MILAN is of the boorcole kind, and propagated like it, but the plants ſhould be put out at a yard aſunder. This is a *very* good winter green, and ſtays longer

longer than any other at ſpring before it ſhows for ſeed, and is then in its higheſt perfection.

COLEWORT is a very hardy, ſmall, open headed green, ſown in *July*, or early in *Auguſt*, for winter and ſpring uſe. But inſtead of the *true* colewort, (a coarſe vegetable) it is common to ſow the early ſort of cabbages as an agreeable ſubſtitute, to be eat in their open ſtate. The *ſweeteſt*, however, is the large ſugar-loaf ſort, ſown about Midſummer, which frequently ſtands the winter.

Theſe plants ſhould be put out for uſe at from eight to twelve inches aſunder, according to the ſort as to ſize, though ſome gardeners plant cloſer.

Coleworts are ſeldom cultivated otherwiſe than for *winter* and early *ſpring* uſe; but *all* the year it were well for the garden to ſupply them, as they are *choice greens*. With this view, ſow cabbage ſeed of ſome ſort every month, and rather the early dwarf.

CUCUMBER has ſeveral ſhades of difference in it, ariſing from culture and accident; but the common and more diſtinct green ſorts of it, are the *ſhort* and the *long prickly*, the *cluſter*, the early *African*, and the *Turkey*. There are alſo a *white* ſhort prickly, and a *white* Turkey ſort; but both are idle bearers.

The *early* nature of a cucumber is the principal object with gardeners, for as much ſkill and care is exerciſed to produce forward ones, it is a great drawback to have ſown ſeed *not* of the forwardeſt kind. Of the ſeed called early, there is no doubt much difference: How material a thing it is to improve the *breed*, and to be aſcertained of the quality of ſeed for *early* crops, is therefore evident.

The *principal* crop of cucumbers ſhould be the *long prickly*, which is preferable, on the whole, to any other. The *Turkey* grows ſtrait, long and large; but quality is certainly before quantity, and the cucumber that eats *criſpeſt* is the beſt. In this reſpect the *Dutch*, or *white* ſhort prickly, (little as it is cultivated) is, perhaps, even

before the juſtly admired long prickly, and has fewer ſeeds: It has an evident difference in taſte, and is moſtly liked. The *early African* is a very favourite cucumber with ſome gardeners.

Seed ſhould never be ſaved, except from ſpiny, handſome cucumbers. See, *Of raiſing Cucumbers* in the laſt ſection.

ENDIVE is a *ſallad* and *culinary* vegetable, of which there are three ſorts, the curled *green* and *white*, and the *plain*, or broad leaved. The plain, or *Batavian* endive, is but little uſed in ſallads, as the curled is ſo much preferable, though cooks prefer it for ſtewing: The *green* is the hardieſt, and therefore the late ſowings ſhould be all of this ſort.

Sow endive at three ſeveral times, between the middle of *May*, and the middle of *July*, at equal intervals. Some of the firſt may, perhaps, run for ſeed; but yet a little ſhould be then ſown; as alſo at the beginning of *Auguſt* for late uſe. Scatter the ſeeds *thin*, and do not ſuffer them to grow in cluſters to become weak. When the plants are about three inches high, plant them out in an open ſituation a foot aſunder, watering them at the time and twice or thrice after, till they have taken root. The ſame ſowing will make ſeveral crops, drawing the ſtrongeſt firſt, and in a week after more. The beſt heads are produced from robuſt plants never moved, and which have been well watered in a dry time. Endive ſhould have a rich ſoil.

Thoſe planted out after *Michaelmas* ſhould be on warm borders; but if long after, (as towards winter) the method of planting is thus, which *blanches* at the ſame time: Draw earth to an *high* ridge, under a ſunny wall, and taking up carefully ſome full grown endive in a *dry* ſtate, gather the leaves up cloſe, without breaking, tie them neatly with baſs, and put them cloſe together, ſideways; i. e. horizontally, in the ridge, almoſt to the top of the leaves. If any ſuſpicion of wet in them, hang the plants up by the roots, in ſome covered,

covered, ſhady, airy place, for a day or ſo. In ſevere weather lay ſtraw over all.

Endive in open ground ſhould be protected from ſharp *froſt* by peaſe haulm, or other dry litter. Some may be planted in frames, or under hand glaſſes, giving plenty of air, or in a ſhed, or hovel, open towards the ſun, either in the upright, or ridged way.

The *blanching* of endive in open ground is thus :— Gather up the leaves (being *dry*,) when nearly of a full grown ſize, and tie them regularly, and carefully round, from the middle upwards, moderately cloſe, with *baſs*, and earth them up to the middle, if the ſoil is light and dry, but not otherwiſe. In two or three weeks, the blanching is effected, after which the endive muſt ſoon be uſed, or it will rot, eſpecially if much wet comes. The object of *blanching* is to take away the bitter taſte of the endive, and to make it criſp and tender. Blanch a little at a time, once a week, that it may come in proper ſucceſſion. See *Succory* (or wild endive) next ſection.

GARLIC is uſed for both *culinary* and *medicinal* purpoſes. The cloves ſhould be planted in autumn, or early in ſpring, in rows ſix or eight inches aſunder, three deep, and ſix from one another in the rows, preferring a light dry ſoil. If the leaves are tied up in knots in *June*, it will prevent their ſpindling for ſeed, and help their bulbs to ſwell. Take them up towards autumn, when their leaves turn yellow; keep them in bags, or hang them up in a dry place.

GOURD, SQUASH, and CALABASH, as of one family ; ſee PUMPION, the culture being the ſame.

HORSE-RADISH is variouſly uſed for *culinary* purpoſes; when ſcraped fine, it is a good addition to *ſallads*, eſpecially in the colder ſeaſons. Propagate crowns, or pieces of the root from one to two inches long, having an eye or two; ſet them from nine to twelve inches below the ſurface of the ground, (according to the nature of the ſoil, as heavy or light) by digging a trench, and

covering them over, or by making holes with a dibble; this ſhould be the work of *February* or *October*, and the ſoil muſt not only be deep, but rich, or the roots will be weak.

This root will grow finer, and be more conveniently dug, to have the rows two feet, and the ſets one foot aſunder in them, though a leſs diſtance is the more common practice. Where there is plenty of ground, however, it is not worth while to be cramped, and the firſt year of planting the ground may be cropped with any early things. The roots will not be fit for uſe the firſt year; but the ſecond they come ſtrong and warm. Take them up carefully, regularly moving the earth away, and cut off cloſe to the ſtool, from whence freſh heads will ſpring.

New plantations of horſe-radiſh ſhould be made about every fifth year; old ones ſhould be cleared from the ſtraggling ſide ſhoots, in order to keep the rows open, but take them up deeply.

JERUSALEM ARTICHOKE is cultivated for the root, (which eats like artichoke bottoms) and it is an ornamental plant, very like the perennial *ſun-flower*, with which it claſſes, but taller. Propagate in *March*, by planting cuttings of its root, as *potatoes*. The root is red, and full of indented eyes, every one of which is ſure to grow. Where it has been once planted, it muſt be carefully dug up, or it will not eaſily be got rid of. Any poor ordinary ſpot of ſpare ground will do for it. Preſerve the roots in dry ſand, when they can be no longer preſerved in the ground, immediately dug from which they are much beſt.

KIDNEY BEAN we have two kinds of, *dwarfs* and *runners*, each of which has a rather numerous variety. Both ſorts have their admirers, but the dwarf ſorts are more generally eſteemed, and more conveniently cultivated.

Of the *variety* in the dwarf beans, ſome come earlier than others; but there is difference in opinions, which

which is the beſt, as to earlineſs and quality. The *yellow* and the *black* are, perhaps, as forward as any, The early *white* is not long behind, and is of ſuperior flavour, but not ſo hardy as the yellow and black, and ſome others. The white may therefore be the ſecond crop. The dwarf ſorts come in quicker than the runners. For the principal crop, the *Batterſea* and *Canterbury* beans are moſtly uſed by the market gardeners, being good and prolific.

Of the *runners*, or climbing ſort, the common *ſcarlet* and the *white* Dutch, are generally preferred, and when mixed together, their bloſſoms make an agreeable ſhew, and bear a long time, if the beans are gathered conſtantly *as* they get fit for uſe.

The *dwarf* ſorts of this vegetable may be had moſt months in the year, by the united means of open culture, hot-beds, and hot-houſes. In cold ground they are ſometimes ſown, cloſe under a *ſouth wall*, towards the end of a dry *March*; but *April* is ſoon enough; for if they get above ground without rotting, (as the ſeed is apt to do, when the ground is long *wet*) a little *froſt* will cut them off. It is a good way to ſow again in about a week, leſt the firſt ſhould fail to come up.

The latter end of *March*, however, if ſome are ſown in a warm border, in *patches*, and covered with *hand-glaſſes*, they will do very well. Or an early crop may be produced by raiſing the beans, at this time, on a gentle *hot-bed*, and planting them out, when two or three inches high, under glaſſes, in patches of four or five, and near two feet aſunder. If the beans are raiſed in ſmall pots, three or four in each, they may be turned out whole, with great advantage, as kidney beans do not always bear tranſplanting well; and they may be covered on nights with hand-glaſſes, garden pots, &c.

When theſe forwarded beans are planted in *rows* ſingly, let it be under a warm wall, and not (if it can be avoided) till the end of *April*, or beginning of *May*; and

protect them awhile at firſt, on cold nights, with matting, or otherwiſe.

As to the *hot-bed* culture of kidney beans, if any are attempted to be brought to *fruit* on heat, let them be raiſed, towards the end of *February*, upon one gentle bed, (or in pots, at the back of a cucumber frame) and planted out in another, in rows fifteen inches a-part, and at four inches in the rows; for nearer they will not fruit well. The bed may be about two and a half feet thick, and muſt have on it ſeven or eight inches of mould, and the plants treated with as much *air* as can ſafely be given them. Line the bed before the heat is quite gone, to preſerve and forward them. The ſort moſt uſed for forcing in *hot-houſes* is a reddiſh ſpeckled one; but the early white is fitteſt for forcing in *hot-beds*, as of lower growth: The early *yellow* and *black* may do. Support them by ties to little ſticks.

The *common* culture of the dwarf bean, in the proper ſeaſon, and open ground, is to ſow them an inch or an inch and a half deep, three aſunder, and two feet, or a little more, to a yard between the rows, according to the ſize of the ſeed, for ſome ſorts require more room than others. Let them be earthed up as they proceed in growth; and to have a *ſucceſſion*, ſow every three weeks; remembering that a crop produces more, and laſts longer, the *oftener* the beans are gathered: It is proper, therefore, to do it conſtantly whilſt *young* and good, even if not wanted.

The *laſt* crop ſhould be under a warm wall, and may be ſown as late as the middle, or end of *July*; and if very dry weather, let the beans for this, and the *June* crop, be ſoaked about twelve hours in milk and water, and the drills watered, in order to forward their germination, and bring them more certainly and regularly up. It is a good way to prepare the ſeed for high ſummer, by laying it in damp mould till it begins to chit, and then planting it in watered drills. In a courſe of dry

warm

warm weather, kidney beans ſhould be watered, eſpecially while young.

The culture of *runners* is to ſow them near two inches deep, four or five aſunder, and the rows four or five feet apart. They will require tall bruſhy ſticks to climb upon; but they may be ſown in *patches* of about fifteen inches diameter, placing the beans five or ſix inches aſunder, in the circumference, and fixing a pole in the middle for them to run upon. The end of *April*, or beginning of *May*, is ſoon enough to put the climbing ſorts into the ground; and two more ſowings, at a month between each, will go through the ſeaſon; i. e. till froſt comes.

If *ſeed* is ſaved, let it be only from ſome of the *firſt* beans of the principal crop, for all late formed ſeeds, and particularly of the kidney bean, are not near ſo good as the early ones, often failing or producing weak plants, and late ill-taſted fruit.

LEEK we have a narrow and a broad leaved ſort of, the latter of which is the one generally cultivated. The leek requires a good ſoil, and open ſituation. There is a ſort with variegated leaves.

Sow in *February*, if the weather is tolerable, or at the beginning of *March*. *Thin* in *April* to three inches aſunder, and *plant* them out the firſt moiſt weather after *Midſummer*, in rows near a foot apart, and at ſix inches in the rows; though if the ground be very rich, and the leeks forward, a little more may be allowed to advantage. Trim the tops, and ends of the roots: and it is a good way (if the ſoil is not heavy) to plant with a dibble, two or three inches in the ground, in order to *whiten* the heads; but to this end ſome have planted leeks in trenches, and earthed them up high, with a light ſoil, or coarſe ſand; at any rate, however, if the rows are wide, earth them up a little.

Towards *winter*, or in proſpect of froſt, leeks may be taken up, and laid with their roots in ſand, or earth, in ſome conſervatory, or cellar. A few may be ſown

towards the end of *April*, or even in *May*, to ſtand over the winter for late *ſpring* uſe.

LETTUCE is a vegetable, of which there is a great variety. The *brown Dutch*, and the *green cabbage* lettuces come earlieſt, and are moſtly to be depended upon to ſtand the winter; though ſome other ſorts will, except the *ſilver coſs* and *white coſs*. The *brown* and the *green Egyptian coſs* are excellent, being hardy and large, forming cloſe heads; but the latter is earlieſt. The *cabbage* lettuce eats moderately well, but is chiefly uſed in ſoups, &c. The *Sileſia* lettuce is much admired by ſome, though at preſent but little cultivated: There is a brown and green ſort of it.

For *winter* and *ſpring* uſe, the hardier ſorts are ſown in *July*, *Auguſt*, and *September*, but chiefly in *Auguſt*, when if three ſowings are made, the beginning, middle, and end of the month, it will generally be found ſufficient. They may be ſown, however, all *September*, or even at the beginning of *October*, and it may be ſtand, when older plants are cut off.

For *ſummer* uſe, the *white coſs*, and any of the others, may be ſown on warm borders, either in open ground, or under hand-glaſſes, or other cover, in *February*, and a little conſtantly every fortnight, or three weeks after, chuſing cooler ground for them when ſummer advances. *Plant* them from ten to fourteen inches aſunder, according to the ſize they attain; it being an error to put lettuces out ſo neat as many do, for it forces them to run for ſeed, and prevents their growing large: The ſorts called the *Egyptian*, and the *admirable*, ſhould be allowed eighteen inches. Lettuces may be *pricked* out *very* young; and when three or four inches high is the beſt time for planting them.

It is not a *common* way, but ſpring ſown lettuces will be forwarder and larger if ſown thin, and only thinned out to their proper diſtance: Thoſe that are drawn may ſerve for a ſecond crop. The *brown Dutch*, *green capuchin*, the *tennis-ball*, and *button* lettuces, do not run

run up ſo ſoon for ſeed as the other ſorts, and are therefore proper for *late* ſummer uſe. To forward early ſpring ſown ones, a ſlight *hot-bed* may be made, and by all means ought to be ſome time in *February*, if thoſe that were to have ſtood the winter are cut off. When theſe plants are an inch high, they ſhould be pricked out, four inches aſunder, upon another gentle hot-bed; and when they meet, or are four or five inches high, draw every other to plant out in open ground, and let the reſt remain to cabbage.

Winter lettuces, that are forward, are more likely to be deſtroyed than the ſmaller, as the wet hangs in them; let them be covered with frames, hand-glaſſes, or hoops and mats; but covered plants muſt have a great deal of *air* at all opportunities. Winter lettuces require a dry ſoil and ſituation, and a wet one is helped by planting them on hillocks, which is a method that frequently ſaves them from rotting: Thoſe in the open ground are often deſtroyed by grubs lurking about the roots, which evil ſhould be ſeen to, if ſuſpected.

To have *fine winter lettuces*, ſome of the forwardeſt may be taken up with balls of earth about them in *November*, and planted at nine or ten inches diſtance, on a ſomewhat ſtrong *hot-bed*, which, as ſoon as the great heat is certainly over, ſhould be covered with ſix or ſeven inches of dry mould for the purpoſe, but give a little water juſt about the roots: *Line* the bed when it gets cool. Lettuces muſt be well attended to; to give them plenty of air, pick off dead leaves, cover on nights, &c. Frequently ſtir the ſurface of the mould, and give water as occaſion may dictate. The *cabbage* lettuce ſucceeds beſt in hot-beds.

Tying lettuces with *baſs*, from the middle upwards, when about three parts grown, will ſomewhat help them to whiten and cabbage; but let this buſineſs be done carefully. Some *gardeners* do not think it worth while to practice it; and indeed, right good ſorts (as to ſeed) will cabbage themſelves, and open ones it is

of little uſe to; yet this aſſiſtance ſhould be adopted for the *firſt* crop, which it may whiten.

Lettuces are ſometimes ſown *thick*, to draw young for ſmall *ſallading*; for which purpoſe, the *lap* and *cabbage* lettuces are the propereſt, as they eat tenderer and ſweeter in their infant ſtate: the *lap* ſeed is very cheap, and chiefly the ſort uſed.

MELON there is a variety of, in ſize, ſhape, coat, and colour of the fleſh. The ſorts we beſt ſucceed with are the *muſk*, (or common oblong ribbed melon) the *Roman*, the *Portugal*, and the *Cantaleupes* in variety, as the common rock, the black, the orange, and the ſilver. The *Roman* and *Portugal* are ſmall, but early. The *Cantaleupes* are juſtly the moſt admired fruit, but are not ſo good bearers as the others.

The *ſeed* brought from the *continent* (where the melons are much finer than in *England*) ſeldom ſucceeds here. Whoever ſows it, muſt not begin too early, muſt uſe more heat, and give leſs water than is neceſſary for *Denizens*. See, *Of raiſing Melons*, p. 192.

ONION, we have ſeveral ſorts, but the *Straſburgh* (oval ſhaped) is that moſtly cultivated, as it keeps the beſt. The *ſilver ſkinned* and *Spaniſh* (flat ſhaped) are milder, and therefore by ſome preferred. The *Welch* ſort does not bulb, and it is rank; but for its being very hardy, is ſown thick in *Auguſt*, and ſuffered to ſtand ſo for winter and ſpring uſe, as a green ſubſtitute for others. At this time, alſo, ſome of the *Straſburgh* may be ſown, and perhaps ſtand the winter in a good ſituation. The *Welch* onion is not only hardy, but *perennial*. They are apt to die down in winter, but the roots ſhoot again; which, when they begin to do, if earthed over an inch, or ſo, they will blanch, come forwarder, and eat the milder.

The *ſmall ſilver ſkinned* onion is the ſort fitteſt for ſummer *ſallading* and *pickling*. Sow firſt at the end of *March*, and to have them young once every three weeks after. Chuſe poor ground for the picklers.

The

The true *ſcallion* is got quite out of cultivation, having given way to the *Welch* onion; as alſo to the other ſorts, that are made milder *ſcallions* of, by planting early in ſpring, thoſe that ſprout in the houſe, which quickly grow. Set them in drills ſix inches aſunder, and two inches apart in the drills.

For the *principal* crop of onions, ſow the *Straſburgh* or any other, towards the end of *February*, or ſoon after, though any time in *March* may do, for it is deſireable to ſhun froſt: Let the ſoil be rich. The earlieſt crops (of courſe) produce the largeſt bulbs. As ſoon as they will bear it, (perhaps in five or ſix weeks,) let them be thinned either by hoe or hand, to an inch or two apart, and twice afterwards, till each root has full four inches ſquare of ground to grow in.

Onions will *tranſplant* when five or ſix inches high, taking care to give water immediately, which repeat; but the ſoil to which they are removed ſhould be rich and well broke. In this way, thoſe whoſe crops have failed may be ſupplied from other gardens. If any onion ſeed is ſown, that comes directly from *Portugal* or *Spain*, it will be very large the firſt year, and ſhould have ſix inches room allowed them to bulb finely.

Crops of *onions* ſhould be kept very *clean* from *weeds*, and it would be of advantage to water them once or twice a week in dry weather. In *July* or *Auguſt*, when the leaves begin to dry at the ends, ſhrink and turn yellow, let them be bent down cloſe to the ground, with the foot, rake, or back of a ſpade rather hard. In about ten days after, let them be drawn in dry weather, and laid to harden by the ſun, turning them every two or three days for a fortnight. *Houſe* them clean and dry, into neither a warm, nor damp, but cloſe room; laying them thin, frequently looking them over in the winter to pick decayed ones out, which would damage the reſt: But onions are beſt kept *ſtrung* and hung up.

PARSLEY,

PARSLEY, broad leaved, as an eſculent *root*, is commonly called *Hamburgh* parſley, and is eat as carrots. Sow it early in *March* or *April*, either at broad caſt or in drills, and leave the plants ſix inches aſunder. The roots may be preſerved in ſand; but it is the practice of ſome to ſow at *Midſummer*, to draw them young in winter, being beſt when freſh dug. It is chiefly medicinal. See *parſley*, next ſection.

PARSNEP is a ſweet and valuable root, leſs cultivated than it deſerves, being accounted very nouriſhing. As *carrots* require a light ſoil, ſo the *parſnep* does a ſtrong one. Sow about the end of *February*, or early in *March*, digging the ground *well* and deep. If the ſoil is light, tread the ſeed in twice over to faſten it in the ground; it comes up in about three weeks. *Thin* when about two inches high, with a ſmall hoe, and afterwards with a large one, ſo as to leave the roots in a good rich ſoil, a foot aſunder, though eight or ten inches will do in light, or indifferent land. Any thing that is to go off quick, may be ſown with parſneps, as *carrots* to draw young, *radiſhes*, *lettuces*, &c. *Parſneps* are not good till arrived to maturity. Theſe roots are to be taken up, and preſerved as *carrots*; but they may remain longer in the ground, and are ſeldom hurt by froſt, ſo that ſome of the roots are commonly left undug till ſpring; take them then up for uſe *juſt* as they begin to ſhoot, if they are not wanted for ſeed; when they will keep good in ſand till *mid-April*.

PEA, we have a conſiderable *garden* variety of, ariſing from the ſize, time of coming in, colour of flower and fruit, and ſomewhat in taſte. The principal diſtinction is made, as to *early* and *late* peas, ſo that if the earlieſt pea is ſown at the ſame time with one of the lateſt, there will be three weeks difference in their bearing, and a fortnight is uſually reckoned between the common *hotſpur* and *marrowfat*.

The

The *early frame pea* (which is that forced in hot beds, &c.) may be ſown under a warm wall at the middle, or rather at the latter end of *October*, or beginning of *November*, and being kept regularly earthed up, will commonly ſurvive the winter, and produce peas by the end of *May:* Do it in ſhort rows, a yard aſunder, at right angles with the wall, or rather inclining a point to the *eaſt*, to catch the firſt ſun.

The *frame pea* is not a good bearer, either in the ſize, or number of its pods, and therefore the *hotſpurs* being hardier and more prolific, are ſown by many gardeners for their *earlieſt* crop, and the difference of coming in is often but a few days. The *frame pea*, however, takes up leſs room than the *hotſpurs*, and in this reſpect beſt ſuits a fruit border, which ſhould not be encumbered with tall crops. *Fancy* will rule in the choice of peas, but the eſtabliſhed ſorts of the *Reading*, or *Charlton hotſpur*, and *dwarf marrowfats*, are excellent for the ſummer crops.

The *frame pea* may be ſown a quarter of an inch aſunder, and the *hotſpur* half; it is common indeed to ſow thicker, but it is not adviſable, if the ſoil is good.

Earthing up peas, and particularly the *early* crops, ſhould be done frequently, a little at a time, in dry weather, beginning when only half an inch high. The early peas ſhould have ſome haulm, or dry ſtraw laid lightly againſt, or over them, in hard froſts: but let the covering be immediately moved aſide when the weather becomes mild.

Sticking peas to take place as ſoon as they begin to vine, (put forth tendrils,) or appear too weak to ſupport themſelves againſt wind. Let the ſticks be ſet ſtrait, neat, and full; and by all means *high* enough for the ſorts; allowing ſticks of three feet above ground for the *frame pea*; near five for the *hotſpur*, near ſix for the *dwarf marrowfat*, and ſeven or eight for the larger ſorts. If ſhort of wood, ſticking only the S. or W. ſide of the rows may do, if the wind does not

not ſet very contrary. Some people ſow double rows of peas at ten inches or a foot aſunder, and ſet ſticks only in the middle, earthing the peas towards them. Peas that are to grow *without ſticks*, may be ſown, the ſmaller ſorts are two, and the larger at three feet aſunder. But uſe ſticks if poſſible.

The beginning of *December*, more peas may be ſown, and towards the end of *January*, or the beginning of *February*, in order to have a *full* ſupply at the firſt of the ſeaſon: The earlieſt opportunity in the *new year* ſhould be taken, if thoſe ſown before have been cut off, or greatly injured. Peas ſown at the beginning of *February* are often not a week behind thoſe of *November*. Peas ſown in the winter months in cold wet ſoils, may have ſome coarſe ſand dug in the drills, to preſerve them from rotting, and otherwiſe help them; ſome alſo may be ſtrewed over them.

To have a full *ſucceſſion*, peas ſhould be ſown every three weeks in ſpring, and every fortnight in ſummer; which may be continued till the middle of *July*, when if ſome *hotſpurs* are ſown in a ſheltered and ſunny ſituation, they *may* anſwer.

The *late*, and large ſorts of peas, as the *marrowfat*, *Moratto*, *American*, &c. ſhould be firſt ſown towards the end of *February*, and not ſooner, leſt they rot.

The dwarf *marrowfats* may be laid in the drills half an inch aſunder, the large marrowfats three quarters, the *Moratto* an inch, and the *American* two inches, and each ſort covered two inches. The *Leadman*'s dwarf pea, for it's ſmall ſize, is admired at genteel tables, and is ſweet and fruitful; but rather longer in coming in than the uſual late ſorts: It eſcapes the *mildew* better than other peas, and therefore is proper for the lateſt crops in open ground. It requires ſticks only from two to three feet high, and may be ſown thicker than any other pea; and till *Midſummer*. On the ſame day that *hotſpurs* are ſown, put in a crop of any

any of theſe *late* peas, and they will come in proper ſucceſſion; i. e. ten days, a fortnight or more after.

To ſave *ſeed-peas*, let none be gathered for eating, except *late* formed ones; which had better not be left among the reſt, for the reaſon given in the article *kidney bean*.

Peas will *tranſplant*, and therefore broken rows may be made up, only chuſe, (if poſſible) mild and moiſt weather for the work in *March*, and ſhade them with a little ſtraw, until they have taken root. If the autumn ſown crops were cut off, peas may be ſown under *hand-glaſſes* in *January* or *February*, and thus forwarded, planting them out when they have been two or three weeks above ground.

Watering peas in a dry time anſwers well, and eſpecially when in flower and fruiting. To receive the water there ſhould be ridges drawn towards the earthing up, forming a gutter on each ſide.

If *ſlugs*, or other inſects attack young peas, ſtrew ſome *lime* freſh ſlacked, or *ſoot* along the ſides of the rows, ſo as not to touch the plants, after which give them a watering, and repeat it a day or two. If the peas are ſtill infeſted, make another application.

Mice muſt be guarded againſt as to *autumn* and *winter* ſown peas, by immediately ſetting traps for them, of which a *number* of the common block ones will be found to anſwer beſt, ſetting one at about every two yards, with freſh baits every two or three days.

Peas do not like *dung*, and will be more fruitful in a moderate ſoil than a rich one, except the *rouncivals*, of which we have a *white*, *green*, *grey*, and *blue* ſort.

Stopping peas (i. e. cropping the leading ſhoot) is practiſed by ſome gardeners, to promote fruitfulneſs and maturity: This is a reaſonable practice, but only relates to the *early* crop.

POTATOE is found to be the moſt uſeful root that is cultivated; as a ſubſtitute for *bread*, it is moſt profitably eat without mixture of corn flour.

The

The *potatoe* raiſed from *ſeed*, changes the ſorts. Some are denominated *meally*, others *waxy;* i. e. are either of a looſe, or a firm contexture. They are diſtinguiſhed again as to *ſhape*, into round, oval, and cluſtered.

Potatoes will grow in any ſoil, but beſt in one that is light, yet cool and good, eſpecially a freſh one. Seaſon, as well as ſoil, makes a difference in their goodneſs, as does the way of boiling them in eating, on which the quality of the water has ſome effect, as indeed it has on all vegetables, and that is the beſt water in which they are boiled quickeſt. The *white* potatoes are generally preferred, but ſome of the *red* kinds are very good; and the old *rough red* from *Lancaſhire*, was one of the beſt ever cultivated. The *kidney* (oval) ſhaped ſorts are moſt generally approved, as boiling or roaſting more equally through; and among theſe, the *red noſed kidney* (a white potatoe with a tinged eye) is a great favourite; but many good ſorts there are.

The *coarſe* kinds of potatoes are given to *hogs;* but whether even for them, *quality* ought not to be preferred to *quantity*, may be conſidered. The *cluſtered American* potatoe is reckoned moſt profitable for cattle, yielding great increaſe; but the goodneſs of a potatoe as *food*, is to be eſtimated by the quantity of *flour* it produces. The *early* potatoes are ſmall, and by common culture are produced in *June*, when ſoon after their tops change yellow, which betokens maturity: They will keep better in the ground (it being ſummer) than if taken up.

The *cultivation* of potatoes is various, as experiment and opinions have led: It would be too much here to take particular notice of each method; and to ſay every thing that might be advanced on this ſubject.

For *ſets*, or *cuttings*, prefer middle ſized, well ſhaped potatoes, and let each piece have one good eye in its middle, or at the moſt two. They ſhould be ſet in rows,

rows, eighteen inches aſunder in a poor ſoil, twenty-one in a middling, and two feet in a rich one. In the former, the ſets may be ſix or ſeven inches apart, and in the latter eight or nine: The *American* potatoe ſhould however have more room each way. In a light ſoil, plant them five or ſix inches deep, and in a heavy one only three or four. When planted deep, they will not need earthing up above once, but when ſhallow, two or three times. In a light ſoil, they may be put in with a blunt dibble, but in a heavy one ſhould be laid in *trenches;* and if the trenches were dug deep, and firſt filled with long dung, old thatch, or ſhort ſtraw, it would be a great advantage; covering them up in ridges, and drawing mould to them as they ſettle. Cold, moiſt ground ſhould be divided into *beds* of two or three rows each, with ſunk *alleys* between; and as in ſuch a ſoil the ſets ſhould not be above three inches deep, the ſinking of the alleys may be made by earthing the rows up from time to time. In a heavy ſoil make the rows rather wider than in a light one, that there be a due quantity of ſurface mould for earthing.

Early potatoes are procured ſeveral ways. On a *hot-bed*, ſome may be planted in *February*, or under *hand-glaſſes*, in a warm border, or without. There are early ſorts on purpoſe for this culture, called *mules*, as they do not bear ſeed. As theſe potatoes are ſmall, they may be planted whole, or rather cut in halves, paring off the eyes at the crown where they are thick, as it never anſwers to have many ſhoots come from a ſet; whole ones ſhould be planted a foot aſunder, and halves at eight inches.

Look over the *ſtock* of early potatoes, and plant thoſe firſt carefully in trenches that have rooted ſhoots, for they will produce the firſt fruit, eſpecially if ſhort and bruſhy. Do not expoſe them ſo long to the air as to get withered. When *up* in *hot-beds*, or under *hand-glaſſes*, let them have plenty of air; and in open ground be protected from froſt by timely earthing up, and occaſional

caſional covering with haulm, or ſtraw, which muſt not be kept on, but upon neceſſity. As theſe early potatoes are on a warm border, a little water in a dry time will forward them, and increaſe their ſize. In default of the *true* early potatoe, ſets with good forward ſhoots of any other ſort may be treated as above; but they will not be ſo good.

From *Mid-March* to *Mid-April* is the propereſt time, (earlier or later as the ſoil is dry or moiſt) to plant for the principal crop, though *May*, or even *June*, generally produce an increaſe worth the cultivation. The roots from *late* crops ſhould not be uſed for planting, as they are more liable to the *curl:* Thoſe potatoes growing ſickly in a wet ſoil, are alſo ſubject to this defect. *Potatoes*, being of ſuperficial growth, ſhould be regularly *weeded*, as long as they can be walked among without treading on the tops.

Ground, deſigned for a *field crop*, ſhould be twice ploughed, and the firſt time it ſhould be ſome weeks before the ſetting.

In the *potatoe counties*, they *change* their ſorts every third or fourth year; procuring freſh kinds from places farther *North*, as a means to avoid the *curl*, which ſeems to ariſe chiefly from the tender nature of the potatoe, and admoniſhes not to be *too* early in planting.

Seedling potatoes are procured by ſaving the firſt *thorough* ripe pods, (called apples) and either preſerving them in very dry ſand till ſpring, or immediately ſeparating them from the pulp, put the ſeed up quite *dry* in papers, and occaſionally look it over to keep it ſo. In *March*, or *April*, ſow the ſeed half an inch deep, in a light ſoil, in drills fifteen inches aſunder, and thin the plants to ſix inches. Earth them up as they grow. Dig them as ſoon as the haulm dies, and carefully preſerving them from *froſt*, they will be fit to plant the next ſpring for table uſe.

That potatoes are very ſuſceptible of *froſt*, is well known; but it is often not ſufficiently guarded againſt

in

in time. Let them be brought in clean and dry. If not kept in a warm *cellar*, they may be laid in a *room*, having ſome ſtraw at bottom, and when in proſpect of froſt entering the houſe, they ſhould be covered with ſtraw, a foot thick.

Pying (as it is called in ſome places) is a good method of preſerving potatoes in winter. They are piled on the ſurface of the ground, in a ridged form, of a width and length at pleaſure, according to the quantity, but commonly about ſix feet wide. This is done by digging a ſpit of earth, and laying it round the edge, a foot wide (if turf the better) filling the ſpace up with ſtraw, and then laying on a courſe of potatoes, dig earth from the outſide, and lay upon the firſt earth. Put ſtraw a few inches along the inſide edge, then put in more potatoes, and ſo on, keeping a good coat of ſtraw all the way up between the potatoes and the mould, which ſhould be about ſix inches thick all over; beat it cloſe together, and the form it lies in, with the trench all round, will preſerve the potatoes dry; and the ſharpeſt froſt will hardly affect them; in a ſevere time of which, the whole may be covered with ſtraw. In the *ſpring*, look over the ſtock, and break off the ſhoots of thoſe deſigned for the *table*, and repeat this buſineſs to preſerve the potatoes longer good.

PUMPIONS being *tender*, are raiſed on a moderate *hot-bed*, in *April*, or *May*, according to the time deſired to have fruit at. After the ſeed has been up a few days, prick the plants out at four or five inches, or rather put them in ſmall pots, one in each. When a month old, they may be planted out about four yards aſunder, one of the large ſorts, or two of the ſmall ones, on a *hole* of two or three barrows full of hot dung, and about ten inches thick of mould. Cover with *hand-glaſſes*, or *garden-pots*, or hoops and mats, on nights, till *Mid-June*. On ſuch a hole of hot dung they may be *ſown* in *May*, under a *hand-glaſs*, and

there remain to fruit. Pumpions will do very well ſometimes (in favourable ſeaſons and ſituations) ſown in *May*, on cold ground. The ſeed ſhould be covered near an inch, and the plants kept earthing up as they grow. When they have ſhot five or ſix feet, peg down the runners a little way in the ground, and earth over, they will ſtrike root. *Water* well in dry and warm weather. The *orange* gourd looks very pretty when trained up a ſtrong pole, ſpirally, or to a wall.

RADISH is of two kinds, the ſpindle rooted, and the round, of each of which there is a variety. Of the former we have the early *purple*, and the early *pink* ſhort topped, and late large topped ones of both ſorts. Of the round there are the *white*, *black*, and *red* turnep radiſhes. The *white* (of which there is a ſmall and large ſort) is moſtly cultivated, but the others are good; the black grows large, and the red ſmall. The purple ſorts, and the ſmall white and red eat the cooleſt. The order of coming in from the time of ſowing is, the purple, and the pink ſpindle ſorts, and the turnep, red, white, and black: The latter is very hardy for winter uſe; but the coarſeſt.

For the *firſt* crop, the early purple ſhort top may be ſown the latter ends of *October*, *November*, and *December*, (chiefly the laſt month) in a warm border, and have a chance of ſurviving the winter, if a little protected in froſts by *ſtout ſticks*, about two inches high, ſtuck ſloping in the ground, to ſupport mats; or by laying peas haulm, or *wheat ſtraw*, lightly over them, which may be an inch or two thick, as the froſt is; but *no* longer than it laſts ſhould the covering be on. The firſt open weather in *January* and *February* ſow again, and in theſe months, and the preceding one, cover the ſowing over with ſome ſtraw, and it will help to fetch the ſeeds up, and preſerve them from being thrown out of the ground by froſt, as alſo from birds. As ſoon as they begin to appear, let them be uncovered, to harden them to the air, if the weather

is not too ſevere. Thin theſe radiſhes to an inch and a half, or two inches aſunder, though ſome gardeners let them grow thicker. Radiſhes ſown in any of the cold months (being on borders) lay the ground a little ſloping to the ſun.

A *hot-bed* is frequently uſed for radiſhes about *Chriſtmas*, or in *January* and *February*, which muſt not be too warm a one, as it would hurry the ſeed up, and make them grow all top, and come to nothing. Two feet thick of dung is ſufficient, on which ſix or ſeven inches of light well broke or ſifted mould ſhould be put on, and the ſeed immediately ſown on the ſurface, (rather thick) and covered half an inch, giving the whole a gentle preſſure; for ſeeds will grow better when the earth is ſomewhat firm about them. *Thin* the plants to an inch aſunder, before they begin to draw one another up weak; if wider it were better, but room in a hot-bed is precious. *Hot-bed* radiſhes, under glaſs, muſt have plenty of *air*, for though covered, are not to be ſhut down cloſe on nights, except ſeverity of froſt demand it. In lieu of frames, a hot-bed of radiſhes may, in *February*, or after, be hooped, and covered with mats on nights, and in bad weather; and in this way, indeed, they generally ſucceed beſt. *Line* forward beds, when the heat declines, that they may proceed in growth, without check or interruption.

Repeat ſowing of radiſhes every three weeks in ſpring, and fortnight in ſummer; in cooler ground as the ſeaſon advances. In dry weather water. Allow three inches diſtance to thoſe ſown after *February*, or rather more for the large topped ſorts. The *turnep* kind may now be ſown; yet their *beſt* ſeaſon is to come in after *Michaelmas*; the ſmall white and red for *ſummer*, and the large white and black for *autumn* and *winter*, which will often continue good till *ſpring*: In proſpect of ſevere weather, ſome of theſe may be taken up, and preſerved in ſand, having firſt cut the tops off ſhort.

Thin

Thin the ſmall turnep ſorts to four inches diſtance, and the large to ſix or eight: Sow the two laſt ſorts in *June*, *July*, and *Auguſt*. In *Auguſt*, or *September*, ſow alſo ſome of the other ſorts of radiſhes, for winter uſe. Turnep radiſhes are rarely ſown on hot-beds; but the ſmall *red* ſort will be found an agreeable early crop, and may ſtand as thick as the ſpindle rooted kinds.

The *ground* ſhould be *well dug* for radiſhes, eſpecially the long-rooted ſorts, and the *ſeed* carefully covered a full half inch, leaving none on the top (if poſſible) to lure birds, which frequently do much miſchief to the crop. It is a troubleſome mode, but radiſhes when *drilled* are ſafer, and being thinned in the rows by hand they come fine. Make the drills for the tap rooted ſorts, from two to three inches aſunder, but for the round wider. It is alſo a good method to ſow radiſhes on *beds* four feet wide, and the mould being made fine on the top, beat the ſeeds in with the teeth of a wooden rake till none appear, and then lightly draw the back of the rake over, to fill up the holes; or, having ſown the bed, cover with mould from the alleys, or earth previouſly drawn aſide.

A *ſprinkle* of radiſh ſeed may be frequently ſown among other crops, as broad-caſt *ſpinach*; and the ground at ſpring that is deſigned for *cauliflowers*, may very properly be ſown with them, juſt before the plants are to be ſet out, or between rows of beans.

Draw the roots for uſe in a regular thinning way, and thoſe that are left will become the larger for it.

Radiſhes are ſometimes ſown thick for eating while very young in the *ſeed leaf*, with other ſmall ſallading.

SALSAFY, though but little cultivated, is a uſeful vegetable. Its young ſhoots are eat as *aſparagus* in ſpring, and its long white *roots* in autumn and winter as *carrots*, ſome of which are taken up, and preſerved in ſand for winter uſe. Thoſe left in the ground may be dug up occaſionally, or left to produce ſhoots for ſpring, or may ſtand for ſeed. *Sow* them early in *March*,

March, in drills ten inches asunder, and thin the plants to six. Let the soil be cool and good, and two feet if possible. Water in very dry time.

SAVOY is a cabbage, peculiarly adapted for late *autumn*, *winter*, and *spring* use, as frost improves it, making it tenderer and sweeter than before. The sorts are *green* and *yellow*; the former mostly cultivated, as it looks best at table.

If savoys are desired *forward*, sow a little in a warm border in *February*, or under a hand-glass; but a sowing in *March*, and another in *April*, in an open situation is sufficient. *Thin* the seed bed in time, that the plants may be straight and robust; and when about three inches high, prick them out at five or six inches distance, where let them grow to a proper size, (as in *June* or *July*) to plant out at two feet apart, or a little more, if in a rich soil. Chuse moist weather for this work, if possible, and give some water. Earth them up as they grow.

Sprouts of savoys are delicate eating spring greens, and therefore if the ground is wanted where the stalks grow, they may be taken up, and laid deep in a trench for the purpose.

SCORZONERA is a carrot-rooted esculent, and therefore requires a deep, and should have a cool soil. Cultivate it as *salsafy*, only let the drills be two or three inches wider, and the plants an inch or two more asunder.

SEA-CALE, or *cabbage*, is a vegetable not generally known, except in *Essex*, *Suffex*, and the *West* of *England*, but it is much liked by many, and as an early spring production is valuable.

Its natural place of growth being the *sea-beach*, it is evident that a sandy soil will suit it best. Some people cultivate it in almost all sand, which, if it is the natural soil of the place, is proper, as such surface sand is endowed with good vegetable principles; but when a soil is *made*, it should be one half *sharp*, or drift sand,

and the other half any light rich mould, which may be a little gravelly, or mixed with ſea-coal aſhes. Sow, or plant, either in *autumn*, or *ſpring*.

It is a root that laſts many years, and therefore ſhould be properly planted and managed; either in beds of it, like thoſe of *aſparagus*, (the which it precedes for uſe) of four feet and a half wide, and two feet alleys between; or in ſingle rows of long trenches, which is the better way. They are beſt raiſed from *ſeed*, though often from *offſets*, or *pieces* of the roots, having two or three eyes.

The *beds* muſt be trenched, and of a dry looſe earth, (as ſaid) to two, or two and a half feet deep; and if there is any ſuſpicion of wet ever hanging at bottom, lay a good courſe of rough gravel or ſtones there. The plants ſhould be near a foot aſunder, kept five or ſix inches below the ſurface, that they may grow through a body of earth to *blanch* the ſprouts; and they are to be cut up four or five inches deep, ſoon after they appear above ground. In *ſummer*, the ribs of the large leaves may be peeled, and eat as *aſparagus*. They will want earthing up from the alleys every year, to keep them at the above depth; for which purpoſe, there ſhould be proper earth in them. It is evidently beſt to *ſow*, or *plant*, low enough at firſt, to be prepared for future earthing up; not to grow too low, however, if there is a clay bottom. *Sets* may be planted at firſt only three inches deep from their crowns, and earthed up to five or ſix as they riſe in order to blanch them: Some do this with *fine* ſifted *coal aſhes*, and the effect may alſo be attained with the *leaves* of trees laid cloſe round. Little ſhould be cut the firſt year, but the ſecond do it freely.

The *ſeed* ſhould be dropped three or four in a hole, half an inch deep, and thinned to one plant, earthing up a little as they proceed in growth. When the leaves decay in autumn, earth the plants over an inch or two, with mould from the alleys. In the ſpring, looſen the earth carefully with the aſparagus fork, and at autumn, earth

earth up as before. The following ſpring, fork again in time, and about *April* there will be plenty to cut; which, if ſuffered to grow large firſt, will eat tough and ſtrong. For *ſeed*, reſerve a ſtool that has not been cut: The *flower* is ſo pretty (white heads) as to be ſown ſometimes merely for *ornament*.

SHALOT is a perennial ſort of onion, for which it is often ſubſtituted, and in ſome caſes preferred, as being more agreeable to the palate and ſtomach by its rich and yet mild nature.

The ſhalot is *propagated* by planting its offsets late in autumn, in a dry ſoil, or in ſpring, if a moiſt one. The latter time is generally adopted as ſafeſt; but autumn ſets produce the fineſt bulbs. Plant two or three inches deep, and four or five aſunder, in rows, ſix inches diſtance from one another. When the leaves wither, dig them up, leſt they decay in the ground, as they are apt to do when much wet falls.

SKIRRET (now little known) is a very wholeſome root, propagated by ſeed, as *ſcorzonera*, and ſometimes by offsets of the old roots in ſpring, planted an inch deep over their crowns.

SPINACH is of two kinds, denominated from the ſeed, as prickly and ſmooth; the former is ſown in *autumn*, i. e. at the end of *July*, and about *Mid-Auguſt*, to gather in winter, and the beginning of ſpring, being very hardy; and the latter is ſown early in the new year for after uſe, though the prickly ſort does very well alſo for the ſame purpoſe. The ſmooth is rather tender, but it grows larger, with thicker leaves, and is therefore ſeldom ſown otherwiſe than at broad caſt; but the prickly is frequently drilled, as between rows of *peas*, *beans*, &c. Spinach may be ſown on pieces of ground, where it is intended to plant cauliflowers, cabbages, or beans, or horſe-raddiſh, by dibble.

At *broad caſt* trample the ſeed in with the feet, rather wide, that there may be a ſufficient quantity of mould to rake down over the ſeed. Hoe the prickly ſort

to four inches apart, and the ſmooth to ſix or more, in a rich ſoil. If in *drills* ſow alſo thin, and cover an inch deep. Some people thin the plants in drills to three inches diſtance, and draw every other for uſe, when thoſe left will grow large, and this may be proper with the ſmooth ſpinach; but it is more common not to thin the rows, and to *gather*, by cutting the leaves down low, when more will ſpring up again. It is a good way to ſow ſpinach in *beds* of four feet, with alleys, that it may be the more conveniently attended and gathered, without trampling the ground: —Gardening in this way of narrow *beds* will, in many caſes, be found very agreeable.

To have a full *ſucceſſion* of ſpinach, ſow in *January* and *February*, and afterwards again in three weeks, and then every fortnight, or even oftener, for it preſently runs to ſeed in ſummer, eſpecially if the plants grow cloſe. Some people are fond of *drilled* ſpinach, as it is quickly gathered, and fancied to eat better; but *broad caſt* is commonly reckoned the beſt way, and gathering the outſide leaves, the plant ſhoots again repeatedly: In ſpring, however, when the ground is wanted, and the plants are diſpoſed to run, they ſhould be *drawn*. Spinach will tranſpant in autumn, and thus bear the beſt ſeed.

TURNEP we have a variety of ſorts of, for table uſe, differing in colour and ſhape, earlineſs and flavour. The moſt common are the *white* ſorts; but the *yellow* and *red* are worthy of trial, particularly the former. The ſmall *early white Dutch* is that moſtly cultivated in gardens, at leaſt for the firſt crops, though the *early ſtone* ſort is a very good root.

Turneps are *ſown* from *March* to *September*, but in *June* and *July* for the principal crops. Late crops may be ſown till *Mid-Auguſt*, but they will produce but little bottoms. Thoſe ſown in *March* will be apt to run for ſeed before they have formed much bottom, and muſt be watched to draw them in time. The

turnep

turnep is ſo favourite a vegetable, that *hot-beds* are ſometimes made in *February* and *March* to forward it, though thus cultivated, it can attain but to a very ſmall ſize. A bed of this ſort muſt be ſlight, and have a great deal of air from the very ſowing. A moderately light ſoil, with little dung, ſuits turneps beſt, and they ſhould always have open ground that is well broke. Mix the ſeed with a little fine earth, ſow thin, trample cloſe, and rake lightly: It is a way with ſome, to ſow one third old ſeed with the new, for the greater certainty of a crop, the former ſometimes ſucceeding when the latter miſſes. Do not neglect to *hoe* the crops in time, the early ones to five or ſix inches, and the late ones to eight or nine, though ſome large ſorts ſhould have more diſtance allowed them.

When the *fly* is obſerved to attack young turneps, it will be proper to ſtir the ground, and ſow again immediately, or to chuſe another ſpot for the purpoſe.

The NAVEW (which is much admired by ſome, and ſaid to be the moſt nouriſhing ſort of turnep) ſhould be repeatedly ſown from *March* to *Auguſt*, in a moiſt ground; but being a ſmall ſlender root, need not ſtand wider than five or ſix inches.

The CABBAGE TURNEP is of two kinds: one apples above ground, and the other in it. This vegetable is ſometimes uſed *young* for the table; but it is chiefly cultivated for cattle. Sow it in *May*, or *June*, for *autumn* uſe, or in *June*, or *July*, for the *ſpring*: They are *very* hardy. If ſown in a garden, and pricked out, they may be tranſplanted in fields, the firſt moiſt weather after a crop of *oats*, or *barley*, at half a yard in a poor, or near two feet in a rich ſoil; and if the ground is foul, this culture gives a fine opportunity to clean it, by repeated hoeing.

SECTION XVI.

OF HERBS, &c.

ANGELICA is cultivated for the large ribs of its leaves, cut in *May*, or *June*, to make a candied *preſerve*; and it is alſo a *medicinal* plant, in ſtalk, leaf, root and ſeed. Sow as ſoon as the ſeed is ripe, for in ſpring it does not come well. Put the plants out when a few inches high, at two feet aſunder. It is *biennial*; but if ſeed is not wanted, cut the ſtems down in *May*, and the plant will put out ſide ſhoots; and by this practice every year, it may be continued long in the ſame place. A moiſt ſituation ſuits it beſt, ſo that ſome plant it by ditches, or ponds.

BALM is either plain or variegated; but the former only is cultivated as a *medicinal* herb. It is propagated by parting the root, either in autumn, or ſpring, but rather the latter. Slip off ſhort pieces with roots, and plant them a foot, or fifteen inches aſunder, giving a little water. The variegated is for the flower garden.

The balm that is gathered for *drying* ought to be cut *juſt* as it gets into flower; as for this purpoſe *all* herbs ſhould, being then in the higheſt perfection; and it ſhould be done as ſoon as the dew is off, for if left till afternoon, in a full ſun, the plant is exhauſted of its juices: Pick off all decayed leaves. Dry it in an airy ſhady place till fit to tie in *ſmall* bundles, which muſt be ſtored by hanging up in a dry airy room, about ſix inches from one another, till perfectly dry, when lay them in a drawer in a dry room, preſſed cloſe, and cover with paper.

Balm,

Balm, and moſt perennial herbs, ſhould be freſh planted in beds every third or fourth year; and each year, in *autumn* or *ſpring*, have the ground ſtirred about them, and dreſſed with ſome freſh earth, or a little well conſumed manure, the plants being previouſly cut down, and ground weeded.

BASIL is a pretty *annual*, of which we have two ſorts, the *large* and the *buſh:* (each having a variety) both are uſed as *pot-herbs*, but chiefly the former. Sometimes alſo this herb (a *few* of the young leaves) is uſed in *ſallads*, and occaſionally in *medicine*. The large grows about a foot high, and the buſh but a few inches. They are both ſweet, but the *buſh baſil* moſt ſo. It has a delicate round form, and ſo is cultivated as ornamental, though its flower is nothing. Both ſorts are uſually ſown on a gentle *hot-bed*, in *March* or *April*, and may be pricked out in ſmall pots, but will hardly endure the open air till *June*. The large is the hardieſt, and will come up on cold ground, but be backward. They like a rich ſoil, and the buſh does beſt in one full half dung.

BORAGE is a cordial herb, that has its varieties, *blue*, *red*, and *white* flowered, and one with variegated leaves; but the former is that commonly cultivated as a *pot-herb*, and its flowers for *ſallads*, and *cool-tankards*. To have it *young* all the year, let it be ſown in ſpring, ſummer, and autumn, either in drills, or broad caſt. Thin the plants to nine inches aſunder. It ſows itſelf in autumn, and likes a dry ſoil.

BUGLOSS poſſeſſes the like cordial virtues with *borage*, ſo that the one may be ſubſtituted for the other. Culture is the ſame.

BURNET is a warm perennial *ſallad herb*, uſed alſo in *cool tankards*, propagated in ſpring, or autumn, either by ſeed, or parting its roots, and planting them a foot aſunder. Keep it frequently cut down, that it may conſtantly furniſh *young* ſhoots for uſe.

CAMOMILE is a uſeful *medicinal* herb, of which we have ſingle and double flowering kinds; and of the latter, a ſort with very full flowers. It is propagated by parting its roots, or by its runners, in *March*, or *April*, ſetting them nine or ten inches aſunder. Gather the flowers in their *prime*, (as thoſe of all plants ſhould be) before they begin to fade; dry them thinly in the ſhade for a few days, and preſerve them from damp in paper bags. The ſingle ſort is the ſtrongeſt flavours, though for quantity, the double is moſtly cultivated: Camomile likes a poor ſoil.

CAPSICUM is ſometimes cultivated for its young pods to pickle; being raiſed on a gentle *hot-bed*, or two, to bring them forward till *June*, when (rather about the middle) they may be planted in open ground, about half a yard aſunder. See Liſts of *annuals*.

CARAWAY ſeeds are chiefly *medicinal;* but being uſed in *cakes*, a few plants may have place in the garden. Sow in ſpring, in a moiſt rich ſoil, and let them have ſix inches ſquare to grow in.

CARDUUS BENEDICTUS, is ſimply *medicinal*, and is of good repute. Sow it in *autumn*, either in drills, or broad caſt, and thin the plants to nine inches diſtance. It is *annual*, and muſt be cut down to the root for *drying*, juſt as it gets into flower.

CHERVIL is uſed in *ſallads*, and is alſo a *pot-herb* that was formerly in much eſtimation for its warm nature. Sow it thick in autumn for winter and ſpring uſe. When ſown in ſpring, or ſummer, it runs quickly to flower. The ſeed muſt be ſlightly covered, and the leaves gathered for uſe *young*, cutting it down like parſley, (which it reſembles) it ſprings again.

CIVES are ſmall bulbs, and a ſort of mild perennial onion, the leaves of which are cut for *ſallads*, and *culinary* purpoſes, at the ſpring, before onions come in. As the *bulbs* increaſe faſt, ſome of them may be ſlipped from the rooted cluſters, and uſed as onions. They

are

are propagated in *autumn*, or early in the *ſpring*, by planting five or ſix of the little bulbs in a hole, an inch deep, and eight aſunder. A bed of them laſts three or four years.

CLARY (the common garden) ranks as a *medicinal* herb, but it is uſed alſo in *ſoups*, and is very odorous. Sow it in ſpring, and when two or three inches high, prick the plants out fifteen or eighteen inches aſunder, or thin them to this diſtance. It is *biennial*, and therefore muſt be ſown every year as parſley is. There are ſorts of this plant cultivated for ornament, bearing pretty flowers. See Liſt of *biennials*.

CORIANDER is occaſionally uſed in *ſoups* and *ſallads*, for its peculiar high flavour; but moſtly for *medicinal* purpoſes, which its ſeeds are uſed in. For culinary uſes, ſow it in *April*, and once a month, or oftener, afterwards, in drills ſix inches aſunder, to have a ſucceſſion of young plants; and make a principal ſowing in *Auguſt*, or *September*, on a warm border. Cover ſome of it with a frame, or it will die in hard weather. If wanted early in the year, ſow one *hot-bed*, in *February* or *March*; or in this laſt month under *handglaſſes*.

CORN SALLAD (or *lamb's lettuce*) is a ſmall, warm, wholeſome, hardy herb, and for winter and ſpring uſe ſhould be ſown in *Auguſt* and *September*, and again in *February* and *March*, and once a month all ſummer, for it is to be eat quite young. The plants ſhould grow about three inches diſtance: This ruſtic vegetable uſed to be much in requeſt, though now rarely cultivated.

CRESS, there are three ſorts of, plain, curled, and broad leaved; the former of which is much uſed as a *ſallad herb*, with *muſtard*, *rape*, *radiſh*, &c. The curled and broad leaved ſorts ſhould be thinned to half an inch aſunder; but the plain is to be ſown thick. The curled makes a pretty *garniſh*. In the cold months, this ſallad herb (as others) is ſown on gentle *hot-beds*, giving plenty of air; and as the ſpring gets up, on warm borders, or under *hand-glaſſes*. The *London*

market gardeners ſow it juſt within the glaſſes which cover their cauliflower plants, &c. In ſummer it ſhould be ſown in ſhady cool ground, and daily watered; or it may be ſown in the moſt ſunny ſituation, if hooped over, and ſhaded with a mat. Break the mould *fine*, and draw *level* ſhallow drills, and cover only a quarter of an inch. It may, however, be ſown at broad caſt, the ground being firſt raked very ſmooth, and the ſeed juſt covered with fine ſifted mould. Let it be ſown (on an average) once a week, and cut *young*. If that which is ſown in open ground, at an early ſeaſon, be covered with a mat, it will forward the germination. The *American creſs* is much like water creſs, only more bitter. It anſwers well as a *winter* and *early* ſpring ſallad, being ſown in *Auguſt*, at broad caſt, or rather thin in drills. The plants being cut, or the outſide leaves pulled off, ſhoot again.

DILL is a very ſtomachic herb, whoſe leaves and ſeed veſſels are put among vegetable *pickles*, particularly *cucumbers*, to heighten their reliſh. The ſtem, leaves, and ſeed, are alſo uſed in *medicine*; leaves ſometimes in ſoups and ſauces. Sow it either in autumn, or early in the ſpring, at broad caſt, or in drills, a foot aſunder, thinning the plants to about eight inches. It ſheds ſeed freely, and comes up at ſpring.

FENNEL (the common ſort) is an hardy *perennial* herb, of the ſame family as *dill*, the uſes of which are well known. It may be *ſown* either in ſpring, or autumn, and the plants ought to be kept near half a yard aſunder; or it may be propagated by ſlips from the roots of old plants. It ſhould be conſtantly cut down to prevent ſeeding, which would cover the ground in a troubleſome degree. *Sweet fennel* is an *annual*, cultivated for its ſeeds in *medicine*.

FINOCHIO is a ſort of *dwarf fennel*, very aromatic; the bottom of the thick ſtalks of which, being earthed up about three weeks, when nearly full grown, five or ſix inches to *blanch*, are uſed in *ſoups* and *ſallads*, or

ſliced, and eat alone with oil, vinegar, &c. Sow it thick in *March*, in drills, about two feet aſunder, and repeat the ſowing every month till *Mid-July*, as it preſently runs for ſeed. Thin the plants to ſeven or eight inches. It likes a dry ſoil. In a warm ſituation ſome may be ſown in *February*; the laſt crop in *June* muſt be in a like ſituation, and will not be ready before winter; at the approach of which, protect it from froſt with dry litter.

HYSSOP is uſed ſometimes in a *culinary*, but more in a *medicinal* way. There are white, blue, and red flowered ſorts of it: but the *blue* ſpiked is that commonly cultivated. The parts for *culinary* purpoſes are the leaves, and young ſhoots; and the flower ſpikes are cut, dried, and preſerved for *medical* uſes, for which it is an excellent herb. As *hyſſop* is a woody evergreen *perennial*, growing about a foot high, it may be planted for an edging of the kitchen garden. It is propagated by ſeed, and rooted ſlips, in *March*, by cuttings in *April*, or young ſlips in *June*, or *July*. A poor dry, or ſandy ſoil, beſt ſuits it. The plants may be nine inches, or a foot aſunder, as an *edging*, but ſhould be near two feet from one another in a *bed*, as they ſoon get large.

LAVENDER (the common) is, for its pleaſant aromatic ſcent, found in moſt gardens, and makes a neat perennial *edging* in large ones. It is propagated by cuttings, or young ſlips, in *April* and *May*, ſet a few inches aſunder, in a ſhady ſituation, and good ſoil; and when rooted, planted out where they are to grow. The ſlips ſhould be occaſionly watered, and as a mat would cover a great many, might be ſhaded when the ſun is hot upon them, for a fortnight or three weeks, to forward their rooting. But though *raiſed* in a good ſoil lavender likes a poor and dry one beſt to *abide* in. Set the plants at a foot diſtance from one another. In a rich moiſt ſoil, they are apt to die in the winter; but in a dry hungry one, they rarely do. All plants the

more luxuriantly they grow, the more likely they are to be cut off by ſevere weather.

MARIGOLD has its varieties, and ſome ſorts bear very fine double flowers; but the common ſingle kind is beſt as a *pot-herb*, being moſt aromatic. All *ſingle* flowers are preferable to the double of the ſame kind for *medicinal*, or other uſes, as poſſeſſing a ſtronger eſſence. Sow marigolds in ſpring, and let plants of the ſingle ſort ſtand a foot aſunder, but the large double wider. They will grow in any ſoil, and are in flower moſt part of the year. The time of gathering them for *drying* is towards *autumn*, when they are moſt plentiful. Take care that they are not put up in their paper bags raw, or damp, and keep them in a very dry place. This flower is a *valuable* ingredient in broths and ſoups, however it may have got into diſuſe. It ſows itſelf abundantly, and will bear tranſplanting about *May*, ſo that there will ſeldom be occaſion to ſow.

MARJORAM is diſtinguiſhed into *pot*, *winter*, and *knotted* ſorts; the two former *perennial*, and the laſt *annual*. They are all occaſionally uſed for *culinary* purpoſes, but the knotted is chiefly cultivated as a *ſweet* companion of our flowers. The propagation of it is by parting the roots of the *perennial* ſorts in *autumn*, or *ſpring*, and by ſowing the *annual* kind in *March*, or *April*, on a warm border, and light dry ſoil. The *annual* ſort ſhould ſtand at ſix inches diſtance, and the *perennial* at nine or ten. The *knotted* ſort, if planted in pots, and houſed, may be preſerved in the winter, cutting down the flower ſtems. This kind is ſometimes uſed for *medicinal* purpoſes, and ſhould be drawn up by the roots, for drying in the ſhade; or at leaſt with but little ſun.

MINT is a ſalutary herb, of which we have two ſorts, the *ſpear* and the *pepper*; the former for *culinary*, and the latter for *medicinal* purpoſes. There is a little variety in the *ſpear*, as broader and narrower leaved,

leaved, and alſo *variegated* ſorts, white and yellow, but theſe are conſidered only as ornamental.

Mint is propagated by pieces of its roots, or rooted ſlips, in the ſpring, ſet an inch or two deep, and eight aſunder, on beds four feet wide. Cuttings will quickly ſtrike root in any of the ſummer months. It delights in a moiſt ſoil, and new plantations of it (particularly cuttings) ſhould be well watered in a dry time. Mint is to be had young all winter, and early in ſpring, by means of a gentle *hot-bed*, on which it ſhould be ſet pretty cloſe; and for a ſucceſſion, make a new plantation every three weeks, as the roots will periſh in about that time. Or it may be conveniently planted in *pots*, and placed in any bed, and ſo ſhifted from one to another, if occaſion. Do not let this, or any other herb be *badly* dried, or preſerved, as is too common a caſe. For *preſent* uſe, gather only the *young* leaves and ſhoots.

MUSTARD is much uſed as a ſallad herb, gathered quite young, and the *white* is the garden ſort, the *black* being cultivated in fields for its ſeeds to make *flour* of. It is managed as *creſs*, which ſee, p. 249.

NASTURTIUM, there is a greater and leſs ſort of, both cultivated for their unripe berries to *pickle*, their flowers for *ſallads* and *garniſh*, and as a garden *ornament*; but the large is that chiefly cultivated for culinary purpoſes. Being *climbers*, they ſhould have ſomething to lay hold of, as an arbour, or bruſh wood, or nailed up with ſhreds to a wall. They are of free growth, and flower abundantly for a long time, even till the froſt comes. Sow an inch deep, in drills, in a light ſoil, and warm ſituation, in *April* or ſooner, if on a gentle heat, to forward them. It is beſt to ſow in a few ſmall *pots*, holding each two plants, from which they may be turned out whole (before they get too big) in *May*; though ſometimes they tranſplant without earth, about the roots, very well. Give them plenty of air while under cover, or they will be drawn up weak.

weak. A freſh, but poor, ſoil; is better than a rich one, which makes them too rampant, and leſs fruitful. See Liſt 8, Sect. 19, and Obſervation.

The *double naſturtium* is conſidered merely as a fine flower, but they are a beautiful *garniſh*. It grows from cuttings: Plant theſe in pots, in *June*, and place them on a little heat, and they will ſoon take root. Or if the pots are plunged in a warm border, and covered *cloſe* with a *handglaſs*, it may be ſufficient. Gently water them when the mould gets quite dry. This plant is *tender*, in winter requiring a ſtove; yet it flouriſhes all ſummer in open ground, flowering moſt in a poor ſoil.

PARSLEY we have a *plain* and a *curled* kind of; and though the former is moſtly uſed, yet the latter is equally proper as a *pot-herb*, and it makes a good *garniſh*: *hemlock* cannot be miſtaken for it, as for the plain ſometimes it has been. There is, however, more of eſſence in an equal quantity of the plain, than of the curled; but it is only uſing rather more of the latter, which, if not ſuffered to ſeed, will ſtand three years. To produce the *curled* ſort very fine, (as for garniſh) the plants ſhould be thinned to three or four inches aſunder; and it may be ſown either at broad caſt, or in drills about nine inches aſunder, as the common ſort is. Parſley is ſometimes ſown *early* in autumn, to have it young for the winter and ſpring; but the uſual time is *early* in ſpring, and one ſowing may be ſufficient for the year: Cut it down often to get rid of the old, and young will ſpring up. Cutting down parſley ſhould never be omitted about the end of *September*, that it may be had good through the winter and ſpring. This herb will bear tranſplanting. For *Hamburg parſley*, ſee *parſley* in the laſt ſection, p. 230.

PENNY-ROYAL is a *pot* and *medical* herb of the mint ſpices. There is an upright and a trailing ſort of it; but the latter is that chiefly uſed: This is propagated by rooted branches, of which it affords plenty,

as

as it ſpreads faſt; and it will grow in the ſummer months from ſlips, or cuttings. Set them a foot aſunder in *ſpring*, or *autumn*, and in a ſtrong moiſt ſoil it will moſt flouriſh. If, however, it is ſuffered to mat thick, it is apt to rot. As this herb is often wanted in winter, let it have a ſomewhat ſheltered ſituation. If cut for preſerving in winter, the time of flowering muſt be obſerved, and it muſt be very carefully dried and kept as it is apt to mould.

PURSLANE is a low growing ſucculent herb, of a cold and tender nature, uſed chiefly in ſummer *ſallads*, but ſometimes for culinary purpoſes. The ſorts are the *green* and *golden*, but the former is preferred, and is hardieſt. This plant will not ſucceed in the open ground till towards the end of *May*, and then it muſt have a warm border. In *March* or *April*, it is ſown on a gentle heat; for which purpoſe the lining of a hot-bed may do. Sow in *drills* four inches apart, cover a quarter of an inch, and let the ſoil be light and *rich*. In dry weather, water it twice or thrice a week. The end of the young ſhoots only are uſed, and when cut down it ſprings again. It is uſual to ſow it three or four times in the ſummer, in cooler places, as the weather gets hot.

RAPE, or *coleſeed*, is ſown for a *ſallad* herb, to be eat while in the ſeed leaf, with muſtard and creſs; and is to be treated as they are: it is ſtomachic, and ſome perſons are fond of it when boiled.

RAMPION is a *ſallad* and *culinary root*, in but little requeſt. Sow it thin in *April* and *May*, and leave the plants at four or five inches diſtance, for autumn and winter uſe: Draw it young.

ROCOMBOLE is a root much like *garlick*, producing ſmall bulbs at head, as well as root: is chiefly *medicinal*. The cloves may be planted in autumn or ſpring, two inches deep, and four aſunder. Treat it as garlick, which ſee. It is ſometimes uſed as a mild ſubſtitute for

for garlick. The ſeeds are eatable as well as the cloves.

ROSEMARY we have the varieties, *plain*, *ſilver*, and *gold* ſtriped. The plain is a uſeful *medicinal* herb, which ſhould be found in every garden. It is propagated by ſuckers, layers, ſlips, or cuttings, in the *ſpring*, ſetting the two laſt where they have not much ſun; and when rooted, *towards* autumn, or in the following ſpring, allot the young plants a ſtation rather warm, and ſheltered, as roſemary is apt to ſuffer, or die, in ſevere winters, eſpecially the variegated.

RUE is a *medical* plant, propagated in ſpring, by ſeed, ſlips, or cuttings. It ſtands many years, but ſhould be prevented ſeeding, and pruned down occaſionally, to keep it in a neat buſhy trim, of moderate height, and ſtrong growth.

SAGE there are ſeveral ſorts of, but the common *red* is that uſed chiefly for *culinary* purpoſes, and the green both for theſe, and *medicinally* for tea, &c. There is a narrow leaved green ſort, called *tea* ſage, or *ſage of virtue;* but the broad leaved green is reckoned by ſome better, not being ſo heating, and unpleaſant to the taſte. The *variegated* ſorts of ſage are only conſidered as ornaments in the flower garden, or ſhrubbery. Sage is propagated by ſlips or cuttings of the laſt year's ſhoots, in *April* or *May*, chuſing thoſe that are ſhort and ſtrong; or of the young ſhoots in the early part of ſummer, ſet in to an inch from the top, and about four inches diſtance, in ſome ſhady place. Theſe, if they ſpindle tall in the ſummer, ſhould be pinched down (in time) to about three inches, in order to form buſhy heads. They will be well rooted in *Auguſt*, when they ſhould be planted a foot aſunder, in a ſunny and ſheltered ſituation, from the N. and E. that they may ſtand ſevere winters, which they will the better do, if the ſoil is rather poor.

SAMPHIRE is by ſome greatly eſteemed for a *pickle*, uſing its leaves, which are ſometimes added to *ſallads*, and

and occaſionally uſed *medicinally*. It is perennial, and propagated by parting its roots, or by ſeed ſown in *April*. It is ſomewhat tender, likes a cool ſituation, but yet prefers a ſandy, or a gravelly ſoil: Let it have plenty of water. Some have found it to do beſt in *pots*, ſet for the morning ſun only.

SAVORY we have a ſummer and a winter kind of; the former is *annual*, and the latter *perennial*; and both are uſed as *medicinal* and *culinary* herbs, but the ſummer ſort is that moſtly cultivated for medicine. The *annual* is propagated from ſeed in *March* or *April*, ſown thin and ſhallow, in drills, eight or nine inches aſunder. The *perennial* is ſometimes propagated from ſeed, but more uſually from rooted ſlips, or cuttings from the top, in ſpring, as alſo from ſide ſlips. The *annual* ſort ſhould grow at ſix inches diſtance in the drills, and the *perennial* be allowed a foot. *Summer* ſavory, gathered for drying, is beſt drawn up by the roots.

SMALLAGE is a ſort of wild parſley, found in moiſt places, and was formerly much cultivated in gardens, and uſed in *ſoups* and *ſallads*, and *medicine*, as a warm herb. Sow it in ſpring as parſley.

SCURVY GRASS (the *Dutch*, or round leaved) is ſometimes cultivated in gardens for its excellent *medicinal* properties. Sow it in *autumn*, or *ſpring*, but beſt early in the former. Though it will grow in any ſoil, it ſhould have a moiſt one.

SORREL is an acid, perennial plant, much reliſhed by ſome as a *ſallad*, often uſed as a *pot-herb*, and ſometimes as a *medicinal* one: Though found common enough in the fields, it is much improved by garden culture. The *round* leaved ſort, commonly called the *Roman*, is reckoned the more grateful acid, and encreaſes in the ground apace. Sorrel is generally propagated by parting its roots, either in *ſpring* or *autumn*, and if propagated from ſeed, (which produces the fineſt plants) it ſhould be ſown in *March*. The plants of the common ſorrel ſhould be ſix or eight inches aſunder, and

and the other a foot, or fifteen inches. Common ſorrel likes a cool moiſt ſoil, but the *Roman* a dry one. Cut it down at the latter end of the year, and cover it over with a little mould, firſt ſtirring the ſoil.

SUCCORY is a *ſallad*, *pot*, and *medicinal* herb, but not much cultivated. To be good, it muſt be well blanched as *endive*, of which it is a wild ſort. Sow it in *March* for *autumn* and *winter* uſe.

TANSEY is a *culinary* and *medicinal* herb, of which, beſides the common, there are curled leaved, and variegated ſorts; but the former only is proper to be uſed medicinally. It is perennial, and propagated by rooted ſlips, in ſpring or autumn, ſet at eighteen inches diſtance, in beds, four feet and a half wide; and will grow in any ſoil or ſituation.

TARRAGON is a perennial *pot* and *ſallad* herb, which is much admired by ſome, for its peculiar high warm flavour. It is propagated ſometimes from ſeed, but moſtly by rooted, or other ſlips, ſet in *ſpring*, or *autumn*, at ſix or eight inches diſtance, and may be by cuttings in the ſummer months. The ſhoots die down towards winter, but the roots are hardy, and increaſe apace. If wanted in winter, it may be dried as other herbs are, or forced as mint, in order to have it green. When the ſtems begin to run, cut them down, in order to produce young ſhoots, for the tender tops only are to be uſed; and that not too freely, as it is an herb that heats much.

THYME is a *pot-herb*, of which there are commonly cultivated a *broad* and a *narrow* leaved ſort, but the former moſtly. There is a ſort called *lemon* thyme, that is admired for its flavour, and another called *ſilver* thyme, which, with the *ſtriped*, are conſidered rather as merely ornamental. It is beſt to raiſe the common ſorts from *ſeed*, though root branches, on account of their trailing nature, may be uſually had from old plants. Slips will grow, if ſet in a light rich ſoil, in a ſhady ſituation, or kept moiſt by watering, Looſening the earth

earth under, and drawing it up about old plants one year, will produce plenty of rooted branches the next. The plants ſhould grow at ſix or eight inches diſtance. If propagated from *ſeed*, let it be ſown thin in *March*, and covered lightly. Slips are beſt made in *April*. This herb makes a neat *edging* when planted cloſe, but it is a great impoveriſher of the ground. Keep it low.

TOMATUM or *love apples*, we have *red*, *white*, and *yellow* fruited; and of the red and yellow, a *cherry-ſhaped* ſort. The firſt, or large *red*, is that commonly cultivated, and it ſerves for an *ornament* in the garden, as well as of uſe for the *table*, in a pickle made of the green fruit, and when red in ſoups, &c. It is alſo ſometimes pickled when red, (i. e. ripe.) At the end of *March*, or beginning of *April*, it muſt be ſown in a moderate hot-bed; and being ſoon thinned, let the plants grow two or three inches high, and be pricked in ſmall pots, to turn into the cold ground towards the end of *May*; or if not long and weak, keep them under cover a little longer. Give them a *ſunny* ſituation againſt a wall, for regular and timely *training*, or ſupport them by ſticks. They take up much room, and in rows ſhould be three yards aſunder. If planted out upon holes of hot dung, it would help their ſpeedy rooting, and forward them much for ripening their fruit, which in bad ſeaſons they ſometimes fail in. They require much *water* in dry weather.

WORMWOOD is a uſeful *medicinal* herb; and common as it is in many places, in others it is not to be met with wild. Beſides the common, there is a *Roman* wormwood—both are efficacious; ſome preferring the one, ſome the other. They are commonly raiſed from *ſlips* and *cuttings*, in any of the *ſummer* months, or from ſeed ſown in *ſpring*.

SECT.

SECTION XVII.

OF FRUITS.

THERE is a *variety* (and of ſome a great one) of each kind of fruit, and the difference of taſtes makes it impoſſible to pronounce upon their particular merits. With reſpect to fruit, there are *provincial* prejudices in favour of ſome, and of apples in particular; ſo that in one county, a ſort ſhall be generally known and admired, and in another, not be heard of.

In aſſiſting the *young gardener* in his choice of the principal fruits, only a few ſorts will be named; ſuch as have obtained almoſt an univerſal credit. It would be well if the number of ſome kinds (as in *peaches*) were reduced; for their multiplicity occaſions a great uncertainty, and their ſhades of diſtinction are hardly diſcovered by the beſt judges. *Nurſerymen's* catalogues furniſh large liſts.

Of the *ſame* ſort of fruit there is often a perceptible difference, owing either jointly or ſeparately to the ſtock, ſtate of the tree, ſoil, ſituation, management, and ſeaſon. Bad planting, by cramping the roots, &c. will often induce ſicklineſs, and of courſe a good plant made to produce ſmall, ill-flavoured fruit, and thus it will appear to be not *itſelf*. So that when the *beſt* method is taken to procure good fruit, (or ſuch that pleaſe us) which is by graffing, or inoculating from the *very* tree we have admired the fruit of, our expectations may, in a meaſure, be diſappointed by a variety of circumſtances.

NURSE-

NURSERYMEN, it is often ſaid, are not to be depended upon, for if they have not the ſort you want, they will ſend you one they have; and this may *ſometimes* be the caſe, as they may think it of little conſequence if you have one that is good. But the caſe is, there is a great *confuſion* in the names of fruit, by accident, ignorance, careleſſneſs, &c. New titles have been arbitarily impoſed on old fruits that have happened to vary a little; and diſtinctions made without a difference, of which circumſtance Mr. *Evelyn* complained in his day, ſaying, "The diſcriminating the ſeveral kinds of fruit, by their *characteriſtical* notes, from the leaf, taſte, colour, and other diſtinguiſhing properties, is much wanting." But as Mr. *E.* obſerves, the ability for this is only attained by long and critical obſervation. Dr. *Hill* (in his *Eden*, folio) profeſſes to have given great aſſiſtance in this matter. "Under the ſection of *fruits*, (ſays he) we ſhall give their proper names and deſcriptions, by which every one will know by what names to call thoſe he ſees." I doubt it; and that an intimate *acquaintance* only can do it.

Diſappointment frequently originates with the *purchaſer*, who having met with a fruit to his mind, inquires the name, and is told a wrong one, and that, perhaps, of a bad ſort; the nurſerymen then complying with his order, is blamed. A reduction of the number of ſorts, to thoſe in which there is an *evident* difference, with more care on the part of thoſe who raiſe, and thoſe who buy trees, in all reſpects; and particularly that of preſerving the true *name*, ſeems neceſſary, therefore, in the affair of fruit trees.

The *choice* of fruit trees ſhould be ſomewhat governed by ſoil and ſituation; (which has been obſerved) for that fruit which ſucceeds in one, will not in another. Later fruit may be planted in light ſoils than in ſtrong ones. Some ſorts grow fineſt in a cool, others in a warm ſoil, and ſome ſituations are too bleak, either for early or late fruit, though the aſpect, and all other cir-

cumſtances, may be good. In *planting* fruit trees, particularly thoſe of the wall, much *diſcretion* is neceſſary to avoid diſappointment.

As fruit trees are ſo readily *purchaſed*, few people care to *raiſe* them; but thoſe who may be diſpoſed this way, will find inſtructions in the ſections *nurſery* and *graffing*. The purchaſer muſt attend carefully to the *planting*, for which work directions have been given in the ſections of the *formation* of a garden, and that on *planting*. For the *training* and *pruning* of fruit trees, ample rules are laid down in the ſection, *On pruning:* ſo that nothing need be ſaid of *their cultivation* here, making proper *references*.

APPLES, as the moſt *uſeful* fruit, it will be proper to provide as many trees of as there may be found due room and occaſion for; taking all care to procure *good* ſorts of the two kinds; i. e. for eating *raw*, and *dreſſed;* and to have a proper *aſſortment* of the *ſummer*, *autumn*, and *winter* fruits.

For the firſt ſeaſon, *jenneting*, *common codlin*, *margaret apple*, and *ſummer pearmain*. Second, *golden pippin*, *Holland pippen*, *golden rennet*, *white calville*, and *Kentiſh codlin*. Third, *nonpareil*, *golden ruſſet*, *Wheeler's ruſſet*, *winter pearmain*, *Kentiſh pippin*, *ribſtone pippin*, *margille*, *Norfolk beefing*, and the *John apple*. There are, no doubt, other apples very good; but, perhaps, theſe have as much merit as any. With reſpect to *raiſing*, *planting*, *pruning*, &c. ſee pages 30, 35, &c. 68, &c. 79, &c. 97, &c. 156, 160.

The *gathering* of apples, and other fruit, from ſtandards, is often badly performed, damaging the branches, and breaking the ſpurs off; let this buſineſs, therefore, be properly attended to, particularly in young trees of good ſorts. Do not pinch, or bruiſe, fruit in gathering, for even the hardy apple may ſuffer.

As to the *keeping* of apples, thoſe which continue long for uſe ſhould be ſuffered to hang late, even to *November*, if the froſt will permit, for they muſt be well

well ripened, or they will ſhrink. Lay them on heaps till they have *ſweated* a few days, when they muſt be wiped dry. Let them then lay ſingly, or at leaſt thinly, for about a fortnight, and be again wiped, and immediately packed in boxes and hampers, lined with double or treble ſheets of paper. Place them gently in, and cover cloſe, ſo as to keep *air* out as much as poſſible. Preſerve them from *froſt* through the winter. Never uſe hay for the purpoſe.

Some of the *choiceſt* table ſorts of apples may be treated as directed for the beſt pears.

The *baking* apples need not be packed, but either kept ſingly on the floor, or ſhelves, or in heaps covered over, when they have ſweated a few days longer than the others, and have been wiped dry; yet theſe, if packed, will certainly ſtand a better chance of keeping the longer. Remove all decaying fruit as ſoon as diſcovered, and ſuffer no damp or muſty ſtraw to remain in the room: Uſe that of wheat or rye.

APRICOT is a fruit ſomething between a plumb and a peach, partaking of a middle nature, both in growth and taſte.

The *early maſculine*, *Bruſſels*, *orange*, *Turkey*, *Breda*, and *Moor park*, or *Anſon*, are the common and beſt wall ſorts; but the *Turkey*, and the *Moor-park*, though excellent fruits, are idle uncertain bearers. The *Dunmore Breda* (excellent) is ripe in *September*.

Gather apricots a little before ripe, or they will loſe that ſmartneſs which recommends them. With reſpect to *thinning* the trees of young fruit, when too full, ſee page 146. Particulars as to *raiſing*, *planting*, &c. ſee pages 30, 37, 71, 90, 103, 105, 129, &c.

BERBERRY (ſometimes called *piperidge*) is a pretty fruit, uſeful as a *preſerve* and *garniſh*; a handſome ſhrub, which makes a profitable, and alſo uſeful hedge, for by reaſon of its thorns it is almoſt impregnable.

Beſides the common *red* fruited, there is a *ſtoneleſs* red, preferred for preſerves. See Liſt 3, ſect. 19. Of *raiſing* this ſhrub, &c. ſee pages 76, 165.

COR-

CORNEL; i. e. *Cornelian cherry*. The fruit uſed to be by many *preſerved* to make tarts, and a *medicinal* preparation was alſo made of it, called *rob de cornis*. See *cherry*, Liſt 2, ſect. 19.

CHERRY: The ſorts may be the *early May*, *May-duke*, (ripe in *June*) *white*, *red*, and *black hearts*, *bleeding heart*, *bigeroon*, *Turkey*, *tradeſcants*, and *morella*; to which may be added, the *yellow Spaniſh*, and *white Swiſs*, ripe in *Auguſt*.

In *gathering* cherries, take care not to pull the fruit ſpur off, which is a very common thing. If they are *properly* ripe, they will part eaſy from the tree. See pages 31, 37, 85, 90, 103, 157, 160, 163.

CHESNUT is not a garden fruit, but the manured, or *Spaniſh* ſort, in an open ſituation, produces good nuts about *Michaelmas*, and may be kept all winter, if covered cloſe from the air. See page 75.

CURRANT, we have a ſmall *red* and *white*, with a larger of each, called *Dutch* currants, the *Champaigne*, or pale red ſort, and the *black*. There are currant trees with variegated leaves, and a ſort with a gooſeberry leaf. See pages 31, 38, 76, 106, 159, 163.

FIG is a fruit, the ſorts of which that are moſtly planted without doors in *England*, are the *common large blue*, *early dwarf blue*, *early dwarf white*, and *large white*. The firſt kind is the hardieſt; but yet do not always ripen well with us abroad. See pages 29, 30, 74, 103, 105, 151, &c.

FILBERD, we have a *white* and *red* ſort of, and the latter judged moſt agreeable in flavour. Other *nuts* are the *Spaniſh*, *cob*, and *hazel* in variety. The firſt is a large nut with a thin ſhell, and the ſecond is a large one with a thick ſhell, but both are good. There is a nut near two inches long, but it does not kernel well. See pages 37, 71, 76, 158.

GOOSEBERRY, there are many ſorts of, ariſing from their propagation by ſeed, differing in their time of coming in, ſize, colour, &c. The large ſorts of gooſeberries (weighing from ten to fifteen penny-weights)

weights) have been much run upon, yet there are ſmall ones better taſted. The *names* at leaſt of the ſorts are numerous, (above 200) but thoſe that have been long commonly cultivated are, the *early black*, *ſmall early red*, *ſmooth green*, *hairy green*, *common and large white*, *hairy and ſmooth red*, *ironmonger*, *Champaigne*, *yellow*, *amber*, and *tawney*. See pages 31, 38, 76, 106, 159, 163.

GRAPE. The only *ſorts* likely to fruit well in open culture, are the *black July*, *white* and *black ſweet water*, *black muſcadine*, and *black cluſter*. See pages 29, 31, 75, 103, 105, 147, &c.

MEDLAR, we have an apple and pear ſhaped ſort of; but this fruit is little cultivated, and not good till rotten ripe. The ſorts are, the *German*, the *Italian*, and the *Engliſh*, or *Nottingham medlar*. *Gather* at the beginning of *November*, lay ſome on ſtraw, and cover with ſtraw; and others (to forward their ripening) put in a box, on a two inch layer of freſh *bran*, moiſtened well with ſoft warm water; then ſtrew bran between them, and cover two inches thick, which moiſten alſo, but not ſo wet as before: Proceed thus, layer upon layer; and a week, ten days, or a fortnight, will do the buſineſs. See pages 37, 75.

The chief value of the *medlar* (as alſo of the *ſervice*) is its late coming in for table uſe, when there is little other fruit to be had: Few like it.

MULBERRY, there is a *black*, a *white*, and a *red* ſort of; but the former is the one generally cultivated for fruit, being as ſuch the beſt. The *white* ſort of mulberry is that cultivated for feeding *ſilk worms*. The *red* ſort is the common mulberry of *Virginia*, hardy, and ſucceeds here.

The *mulberry tree* ſhould have a *graſs plat* under it for the fruit to fall on: for thoſe thus picked up will be ſuperior to what may be gathered. See pages 32, 37, 75, 157.

NECTARINE is much like the *peach* in all reſpects, only that it is ſmaller, has a ſmooth ſkin, and of firmer fleſh. The *Newington*, *red Roman*, *temple*, and *murry*, are good ſorts, to which the curious, in a good ſituation, may add the *early nutmeg*, the late *green*, or *Peterborough*, and the *white Italian*.

In *gathering* nectarines and peaches, never *pinch* them to try whether they are ripe; for when ſo, the *touch* will diſcover it, and when thorough ripe (as they ſhould be) they will come from the tree with great eaſe. See pages 29, 30, 71, 90, 103, 105, 129, &c.

NUT, ſee *Filberd*.

PEACH (in general) ſucceeds better than the nectarine, as to bearing and ripening. There is a great variety of peaches under cultivation in *England*, but on the *Continent* the number is much greater. The following may be recommended: The *early Ann*, *early Newington*, *early purple*, the red and white *Magdalens*, the two *mignons*, *nobleſſe*, *admirable*, old, or late *Newington* and *Catherine*.

Peaches cannot be too *ripe*, (ſee *nectarine*) ſo that thoſe which *drop* are by many reckoned the beſt; and thoſe whoſe fleſh adheres to the ſtone (called *pavies*) are by ſome thought the more delicious. The *nobleſſe* and *admirable* part from the ſtone. See pages 29, 30, 71, 90, 103, 105, 129, &c.

PEAR, there is a great variety of, claſſed into *ſummer*, *autumn*, and *winter* fruits. The *ſummer* ſorts may be the *green chiſſel*, *Catharine*, *Jargonelle*, and *ſummer Bonchretian*. The *autumn*, *brown buerre*, *bergamots*, *ſwan's egg*, and *dean* pear, or St. *Michael*. The *winter* St. *Germain*, *creſan*, *winter bonchretian*, *colmar*, and *chaumontelle*. Theſe all come in for eating regularly, the firſt in *July*, and the laſt continues on to *June*. *Baking pears*, *Parkinſon's warden*, the *union*, or *Uvedales* St. *German*, *cadillac* and *black pear* of *Worceſter*, good to Midſummer.

Gather

Gather pears of the *ſummer* ſorts rather before they are ripe, as when thoroughly ſo they eat mealy, and will not keep well above a day or two; even when gathered as they ought to be, in a week, or leſs, they will go at the core: They ſhould not, however, be gathered, while they require much force to pull them off. *Autumn* pears muſt alſo not be full ripe at the time of gathering, though they will keep longer than thoſe of the ſummer. *Winter* pears, on the contrary, ſhould hang as long on the trees as they may, ſo as to eſcape *froſt*, which would make them flat in flavour, and not keep well. Generally they may hang to the middle of *October* on full *ſtandards*, a week longer on *dwarfs*, and to the end of the month on *walls*; but yet not after they *are* ripe.

The *art* of gathering, is to give them a *lift*, ſo as to preſs away the ſtalk, and if ripe they *readily* part from the tree. Thoſe that will not come off eaſy, ſhould hang a little longer; for when they come hardily off, they will not be ſo fit to ſtore, and the violence done at the footſtalk may injure the *bud* there formed for the next year's fruit.

Let the pears be quite *dry* when pulled, and in handling avoid *pinching* the fruit, or in any way (in the leaſt) bruiſing it, as thoſe which are hurt not only decay themſelves, but preſently ſpread infection to thoſe near them: When *ſuſpected* to be bruiſed, let them be carefully kept from others, and uſed firſt. Gather in ſhallow baſkets, and lay them in gently.

Houſe pears in a dry airy room, at firſt thinly for a few days, and then put them in heaps to ſweat; in order to which, a blanket thrown over them will help. The *fermentation* muſt be watched, and when it ſeems to have paſſed the height of ſweating, wipe the fruit quite dry with fine flannel, or clean ſoft linen, and *ſtore* them.

The *ſtoring* is thus: Thoſe to be uſed firſt, lay by ſingly on ſhelves, or on the floor, in a dry ſouthern

room, on clean dry moſs, or ſweet dry ſtraw, ſo as not to touch one another. Some, or all the reſt, may be ſtored as directed for *apples*: for they will thus keep very well, having firſt laid a fortnight ſingly, and then nicely culled. But the moſt ſuperior way is, to pack in large earthen, or China *jars*, with very dry long moſs at the bottom, ſides, and alſo between them, if it might be. Preſs a coat of moſs on the top, and then ſtop the mouth *cloſe* with cork, or otherwiſe, which ſhould be *roſined* over, with about a twentieth part of *bees-wax* in it. As the object is effectually to keep out *air*, (the cauſe of putrefaction) the jars, if earthen, may be ſet on dry *ſand*, which put alſo between, round, and over them, to a foot thick on the top. In all cloſe ſtoring, obſerve, there ſhould be no doubt of the ſoundneſs of the fruit. Guard in time from *froſt* thoſe that lie open. Jars of fruit muſt be ſoon uſed after unſealing. See pages 31, 37, 44, 71, 74, 82, 89, 90, 95, &c. 103, 153, 160.

PLUM, of the many ſorts the following are good: *Green* and *blue gage*, *Fotheringham*, *white* and *blue perdrigon*, *drop d'or*, *la roche Corbon*, *la royal*, and St. *Catharine*. The *imperial*, or *red magnum bonum*, and *white magnum bonum*, are chiefly uſed in tarts, and for ſweetmeats, as is the *Wentworth*. The *early white primordian* (not a choice fruit) is valuable for its coming in the beginning of *July*; and the *imperatrice* for not coming in till *October*. *Damſon* and *bullace plum*, black and white, very late in the ſeaſon, for tarts, and a fine acid preſerve. See pages 31, 37, 71, 74, 82, 90, 103, 158, and 160.

QUINCE, we have the *common apple*, and *pear ſhaped*, and *Portugal pear ſhaped*. This fruit cannot be eat raw, but for *marmelade*, and baked in *pies*, &c. the houſewife finds it uſeful. The *Portugal* is moſtly eſteemed. Quinces may hang till *November*. The ripe ones only are of value, which after ſweating a few days,

days, muſt be laid ſingly (at ſome diſtance from one another) on a ſhelf. See pages 37, 74, 103.

RASPBERRY, the kinds are *red* and *white*, and of each a *twice* bearing ſort, i. e. producing fruit in ſummer and autumn. Of the *red* there is a prickly wooded ſort, and a ſmooth one, called the *cane*, and ſometimes the *reed* raſpberry; and the large *Antwerp*, of a yellow white, ſometimes called the *Middleton* Raſp.

Gather this fruit carefully, and not long before wanted; lay no great quantity together. Raſpberries preſently loſe their flavour, and tend to decay. See pages 38, 55, 77, 106, 164.

SERVICE, (ſweet) or *ſorb apple*, is rarely cultivated for fruit, as it requires a warmer climate than *England* to ripen it. In fact, it never ripens on the tree. It is gathered late in autumn, in a very auſtere ſtate, and laid by on ſtraw to decay, when in about a month it becomes agreeable to eat. The trees are hardy, and the curious often plant them, merely for the ſingularity of their leaves and fruit. This tree is ſometimes trained, on a wall, or eſpalier, as pears. There is a variety, as the *apple*, the *pear*, ſhaped, &c. See liſts of trees, 1, 2, Sect. 19.

STRAWBERRY: Of this fine flavoured fruit, beautiful and fragrant, we have the following ſorts: *Red*, *white*, and *green wood*; *red* and *white Alpine*: *ſcarlet*; *Carolina*; *hautboy*; *red* and *green pine-apple*; *Chili*, of ſorts; with ſome ſeminal varieties, as ſeveral of the *hautboy*, and one in particular of the *Carolina*, called the *pink fleſhed* ſtrawberry. There is alſo a ſtrawberry with *one leaf*, a variety of the wood and prolific.

Gather ſtrawberries regularly as they ripen, with a bit of their ſtalk, and never lay many together to preſs upon one another. The freſher they are, the finer eating; for this fruit, as the *raſpberry*, is quite naught when ſtale. See pages 38, 51, 55, 77, 111, 165.

WALNUT, there are ſeveral ſorts of, as *early* and *late*, *ſmall* and *large*, *thick* and *thin ſhelled*, &c. Two

only need be named, the *early oval thin ſhelled*, and the *common round*, or *royal walnut*. All the others ſeem to be only ſeminal variations from the laſt, which is juſtly reckoned the beſt fruit. Procure trees from ſeven to ten years old, as they ſeldom bear till about twenty years of age. See pages 76, 103.

SECTION XVIII.

OF FLOWERS.

Flowers, the ſole luxury which Nature knew,
In *Eden's* pure and guiltleſs garden grew;
Gay without toil, and lovely without art,
They ſprung to cheer the ſenſe, and glad the heart.

BARBAULD.

FLOWERS, as to their cultivation, are claſſed into *annuals*, *biennials*, and *perennials*. *Annuals* are thoſe that are ſown and flower, and generally die within a year. *Biennials* are thoſe that are ſown one year, and flower and generally die the next; though ſome of theſe, by ſowing early, and forwarding by a little heat, will blow the ſame year. *Perennials* are thoſe that do not flower the year they are ſown, but the next, and continue to live years afterwards, ſome fewer, ſome more: Of this claſs there is a great variety, (perhaps fifty to one of the laſt) moſtly fibrous rooted, ſome fleſhy, ſome bulbous, and ſome tuberous, &c. Moſt of the *perennials* are annual in their ſtalks, which die down to

to the ground in winter, and freſh ſhoots riſe in the ſpring. But, ſtrictly ſpeaking, all of each claſs are not *annual*, *biennial*, and *perennial*; for ſome of the *annuals* come (though more weakly) a ſecond, or a third year, as *Chineſe holyhock* and *Indian pink*, and a few others, (which die abroad) would live through the winter if houſed. Of the *biennials*, the ſame may be ſaid of the *ſtock July-flower*, *ſweet William*, and *wall flower*; only the former of theſe plants does not always live through the winter. All are to be ſown, or propagated, as they are claſſed, in order to have a certain and fine blow. Of the *perennials*, ſome do not flower well above three or four years, as the *holyhock*, &c. for which a ſowing ſhould of courſe take place the year before they are wanted: A few may alſo go off the ſecond year, having perfected only one blow. See pages 41, 42, 55, 56, 59, 64, 65, 69, 110.

What ſweets are theſe which gratefully diffuſe
Their fragrance round? ——————
——————————'Tis the *flowers*,
The incenſe of the garden's breath, that ſheds
This balmy ſweetneſs.——————
——————————To the ſmell
How grateful, not leſs pleaſing to the eye
The bloom of opening flowers.—Kind Nature here
In nice proportion all her favours deals;
Thoſe gales around the bliſsful *garden* pours,
Neither too ſtrong the organs to oppreſs,
Nor yet ſo faint the ſenſes to elude.

See in what various tints the flowery tribes
Their ſeveral beauties ſhew, and court the eye
With new delight, diſtinguiſh'd each from each
By different hues—how wiſe the bounteous hand
Of that indulgent power! tho' perfect all
His works, who yet on all the charms beſtows
Of novelty to ſhew 'em ſtill more fair.

NEWCOMB.

1. OF ANNUALS.

Annual flowers are uſually divided into three claſſes, i. e. *tender*, *leſs tender*, and *hardy*.

In the liſt, ſection 19th, the *tender* annuals are marked 1, the *leſs* tender 2, and the unmarked are *hardy*.

To this *liſt* of flowers might be added others, and ſome poſſibly that are pretty; but many of the annuals introduced for variety's ſake in large gardens, plantations, &c. are weed-like, dull, and rambling, and perhaps a few among thoſe here mentioned may not be ſufficiently *ornamental* (as, for inſtance, the *whites*, where there are other colours of the ſame flower) to give general ſatisfaction; for a *gay appearance* is certainly the firſt object in the cultivation of flowers to adorn our walks. There are *rare* plants, and others admirable in their ſtructure and properties, which make no ſhew; but theſe are rather ſubjects for the curious *botaniſt*, and he will deſervedly think them worthy of a place in *his* garden.

Some *flowers* are both beautiful and fragrant; but many have only one of theſe properties to recommend them. Some are cultivated chiefly for the beauty or elegance of their *leaf*, as the *tricolor*, *ice plant*, *palma chriſti*, and the *curled mallow*; and ſome that bear pretty and ſweet flowers, are meanly furniſhed with leaves, as the *yellow ſultan*. Others obtain a place in the garden, neither for fragrance, or flower, or leaf; but merely for the ſingularity of the *fruit*, or ſeed veſſel, as the *egg plant*, *ſnails*, *caterpillars*, *hedge hogs*, *horns*, and others.

In the given *liſt*, ſome of the tender annuals may occaſionally be conſidered as *leſs tender*; as *Amaranthus*, *coxcomb*, and *tricolor*, *balſams*, *double*, as well as *ſingle*, and *ſtramonium*; only they will not be ſo forward and fine. Some of thoſe alſo among the *leſs tender* may be

be ſown as *hardy*, for a late blow, as *China-aſter*, *Indian pink*, *love lies bleeding*, *French* and *African marigold*, *princes feather*, ten week *ſtocks*, and *ſweet ſultan*. Some among the *hardy* annuals may advantageouſly be treated as the *leſs tender*, to enſure their germination, or to bring them *forward*, as *belvidere*, *Indian corn*, (the large ſort of which *muſt* be forwarded upon heat) *mignonette*, *naſturtium*, and *perſicaria*.

The CULTURE of each Claſs follows.

1. OF ANNUALS.

ABOUT *Mid-March* is a general good time to ſow the TENDER (and in ſhort all) ſorts, though the curious and ſkilful being well furniſhed with proper frames, &c. may begin a month ſooner; the end of *March*, or beginning of *April*, is, however, not too late, and will (perhaps) better ſuit a *young* gardener than if he ſowed earlier. In order to ſucceed in this buſineſs, there ſhould be provided fine dry and rich earth, good ſtable dung, frames and lights, or roomy hand-glaſſes, and mats to cover.

A moderately ſtrong *hot-bed*, for a one light frame, may be prepared, and the violent heat being certainly over, the ſeeds either ſown thinly in *drills*, two or three inches aſunder, on five or ſix inches of mould, or leſs on a weak bed. May ſow alſo in *pots*, plunged to the rims. Cover the ſeeds from a quarter to half an inch, or more, according to their ſize. Some of them will appear in a few days, and others will lie a fortnight or more, according to the circumſtances of their particular *nature*, *age*, and the *heat* or *moiſture* they meet with in the bed.

Thin the plants a little in time, and ſoon after to an inch, and then again to two, aſunder. By no means let them be crowded, which would draw them up weak,

and occaſion a crooked growth; whereas a robuſt and erect ſtature is the beauty of any plant.

Water, juſt warm, muſt be *gently* given them, (not to beat them down) as they may appear to *need* it, and *air* (particularly in a full ſun) as much as they *can* be thought to bear, a little at firſt, and by degrees more, for this is eſſential to their health and ſtrength.

The ſeeds may alſo be ſown in *pots*, and plunged at the back part of a *cucumber* or *melon* bed. A bed may be got ready to *prick* them into when grown a little, or into pots placed in the like manner; and where only a *few* are cultivated, this method is adviſeable, (to ſave trouble) not beginning too early.

Provide *another bed* by one month from the ſowing, to ſet the plants out in; and having ſix inches depth of mould, place them five or ſix inches aſunder, allotting thoſe to the warmeſt part of the bed which were longeſt coming up, and which are of courſe the weakeſt, as *globes*, &c. or they may be put out in ſmall pots of five inches diameter: Place the talleſt behind. Let the mould be warmed through before planting. There had better be too *little*, than too much heat; but if the bed gets over cool, *line* it, or *cover* round with ſtraw, as directed in the management of hot-beds, page 174.

If not ſown till the beginning of *April*, this ſecond bed may poſſibly go through the buſineſs, with proper management to keep up its heat, and covering well on nights; but a *third* bed is commonly neceſſary, in order to ſucceed *well*, and bring the plants on forward and fine. In this bed, it being covered over with four or five inches of mould, the plants ſhould be in ſmall pots, one in each, and plunged an inch deep, cloſe to one another. As the bed gets cooler, the pots are to be earthed higher, till up to the rims in mould; but if planted without pots, the diſtance ſhould be eight or nine inches aſunder.

More *water* and *air* is neceſſary as the plants increaſe in ſize, and every time they are ſhifted, let it be carefully

fully, with ſome earth about their roots; though a warm bed will ſoon make them ſtrike, if without mould. Let them be *ſhaded* from ſun a few days; i. e. till rooted in their new habitation. As theſe tender annuals do not rightly bear the full open air till *Mid-ſummer*, give them reſolutely as much of it as poſſible in the frames, (by degrees) even to taking off the glaſſes in the middle part of fine mild days. Keep up a heat in the third bed as long as can be, that the plants may continue in a growing ſtate, and not get ſtunted by cold at bottom. To this end, a *fourth* bed, for ſome of the ſorts, as *globes*, *coxcombs*, &c. would be a greater advantage as to ſize, eſpecially if the weather is unkind.

It is hardly neceſſary to hint that the *beds* muſt be larger, and *frames* deeper, every time the plants are ſhifted. As the firſt frame was a *one* light, let the ſecond be a *two* light, and the third a *three* light, which may be raiſed upon bricks, or boarded round the bottom, as occaſion may require. From the ſmall *pots*, let them be tranſplanted into bigger in time, or (as ſoon as they can ſafely be) into warm borders, where, if covered with hand-glaſſes, ſet on bricks for a while, it would ſecure them from unkind weather, till got a little hardened. In this changeable climate of *England*, there is hardly any knowing when tender plants may be expoſed ſafely; yet *too* much houſing and covering is to be avoided as much as poſſible. Many flowers will need *ſupport*. See page 55. For the method of *ſhifting* plants from pots, as into bigger, or to the open ground, ſee page 184.

Some of the tender flowers in pots may be plunged to the rims in the ground, to keep their roots cool, and for the ſake of being conveniently covered; in which caſe, it is proper to put a bit of tile underneath the pot to keep out worms, which otherwiſe would get in.

Good *ſeed* from tender annuals will not be well had, but from *February* ſown plants. Skilful gardeners, ſowing early, and having plenty of dung and *drawing*

frames, produce ſurpriſing plants of the tender annual claſs; ſo that the *globe amaranthus* has been raiſed to three, and the giant *coxcomb*, and *tricolor*, from three to five or ſix feet high. Tender flowers deſigned to gather *ſeed* from, ſhould begin to have ſome protection of glaſs about *Mid-Auguſt*, at leaſt on nights, till they are fully ripened in *September*.

Scoop trowels, of two or three ſizes, will be found very uſeful in the ſhifting of flowers in general, but particularly of the hot bed ſort; and as they ſhould be clean from dirt when uſed, ſo alſo ſhould they be free from *ruſt*, by which they will work much pleaſanter, and more ſucceſsfully: In ſhort *all* garden tools were better kept bright, as well for uſe as neatneſs. Before a trowel is uſed, in the removal of a plant, it is a ſafe way to cut ſtrait down round the root, and to the bottom, with a large, clean, and not very blunt knife; ſo will the trowel take all up whole, and the fibres will not be lacerated, or barked: But attempt not to take up more earth in a ball than is likely to hang together, leſt all drop by its weight. Tranſplant (if poſſible) always in moiſt, or cloudy weather.

A *ſmall watering pot*, (i. e. from two to three quarts) with a *finely* pierced roſe, is alſo neceſſary, to give refreſhment without bending down the plants, or hardening the ſurface of the earth. The *form* of many a good flower is ſpoiled in its infancy by *rough* watering, and particularly *capſicums*; to avoid which evil, whatever pot is uſed, let it be only half full.

The *potting* of plants is often careleſsly, but ought to be moſt carefully performed, that as little check as poſſible may be felt by the roots. Fill the pot one third, half, or more, full, (as the caſe may require) and then make a hole in the middle, adapted in form to receive the plant, with its *ball* of earth; and be ſure do it right at firſt, ſo as not to be too high, or too low, for once put in, it will not be ſafe to take it out again, leſt the mould drop from the roots. Do not preſs the ball of

of earth, (as ſome do) but only juſt faſten the looſe mould that is put round it. If the ſoil is light, preſs that a little which is firſt put in at the bottom. If a plant that is to be potted be *without* mould about its roots, raiſe a *hillock* (at a proper height) in the middle of the pot, to lay the roots on and round: It muſt always be avoided planting in the pots *too* deep, becauſe ſo much of the pot is loſt as is above, except the ſort is apt to ſtrike root above, as *balſams*. In all *tranſplantations*, it is proper to ſhorten ſome of the roots, and the moſt ſtraggling are to be choſen for the purpoſe; ſo that when it is done with a *ball* of earth, ſome of the external fibres muſt be cut off, if it was not done by taking up, which it generally is when the plants are any thing large.

Annuals in *pots* will require *water* every day, in very hot weather, and in moderately ſo, every other; but thoſe in the open ground will do twice as long (or more) without water being given them. Some ſorts will need more water than others, as *egg plants* and *balſams*, than *coxcombs* and *tricolors*. This matter, and a variety of others, will be learned by *obſervation*, without a talent for which, no one can poſſibly become a *good gardener*. The moſt exact directions will not take in every caſe, and rules will be of little avail, where the mind is not in diligent exerciſe.

In general, *potted plants* require *water* according to the weather, their ſituation as to the ſun, the ſize of the pots, the fulneſs of the roots, the quantity of leaves, and the particular nature of their ſubſtance, as ſucculent or not: The ſmaller pots muſt have it the more frequently. The *earth* alſo in which plants grow makes a great difference, as ſome ſorts of ſoil retain moiſture much longer than others. It may be a *queſtion* whether pots of *annual* flowers ſtanding in *pans*, ſhould have water conſtantly kept in them, or only watered (in due time) on the top, till it runs through: Both practices are followed by good gardeners; but the latter I think beſt;

beſt; as keeping the young fibres at the bottom always ſodden can hardly be right: With reſpect to *perennials*, (except of an *aquatic* nature) it muſt be wrong. Let pots of flowers in the ſummer be placed pretty much in the *ſhade* and *ſhelter* but not by any means be under trees, or a roof. A ſituation where they have only the *morning ſun* till eleven or twelve o'clock is the beſt; and ſome perſons are ſo curious in this reſpect as to have *awnings* for the purpoſe, and temporary *reed fences* to keep off the wind, to which flowers (particularly of the tender kind) ſhould not be wholly expoſed. *Annuals*, or even a few *perennials*, may be put in covered places, when nearly in full blow, for the ſake of their ornament; but the latter ſhould not be continued longer than while the prime ſhow laſts, for it will make them weak and crooked.

It is *adviſable* not to *pot* more hardy plants than neceſſary, as they occaſion much trouble, if properly managed; and after all, will not be ſo fine as thoſe growing in the open ground. Some things are too tender for open culture, and by potting they are conveniently protected by *frames*, or by *houſing*, and ſometimes ſimply plunging them in the ground, cloſe againſt a warm wall, in winter, where a little protection may be eaſily given them. Others it may be deſirable to pot, for the ſake of moving them into particular places, when in *blow*, and to have ſome ready to put into the ground, where others are gone off, ſo as to keep certain favourite borders and walks always well furniſhed; but do not have *too* much to do in this way.

A *ſecond* ſowing of *tender* annuals ſhould take place three or four weeks after the firſt, according as that was made, late or early; for their beauties are certainly deſirable, as long as the ſeaſon will permit us to behold them, and they are the *floriſt*'s chief dependence in the *autumn*, when, if he is emulous to do well, he may make a noble creditable ſhew. See *liſt* 7, in next ſection, with the obſervations.

The

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The LESS-TENDER annuals ſhould have a ſlight bed (about two feet thick) made for them at *Mid-March*, or a little after, being ſown and managed as directed for the tender ſorts. When they are one or two inches high, (according to their nature) they muſt be taken up with a ſcoop trowel, ſo as to keep a ball of earth about their roots, and either tranſplanted on another bed, about one and a half foot thick of dung, or into the cold ground; the ſmall kinds at four or five, and the larger at ſix or eight inches aſunder, in a *good* well broke ſoil. Let them be immediately watered and kept moiſt, and ſhaded from ſun till well ſettled. Here they may grow till their leaves begin to meet, when they ſhould be cut between their roots with a good knife, and lifted up neatly with a ſcoop trowel, to be potted or planted where they are to flower: If this buſineſs is done *well*, they will receive but little check in their tranſplantation. *Spindle* rooted plants (as *ſtocks*) ſhould be moved where they are to blow, as young as may be; but *fibrous* rooted ones may be ſhifted much older.

Plants will *flag* a little even when removed with a large ball of earth; becauſe *ſome* of the fibres of the roots are either broke or cut, and a plant is chiefly fed by the youngeſt and moſt *extreme* parts of the root. If poſſible, let all *ſummer* tranſplanted flowers be *ſhaded* from ſun, by garden pots, (raiſed a little) or otherwiſe, till they have ſtruck freſh roots, which they will ſoon do; but uncover on nights. This will occaſion ſome trouble; yet the advantage attending it makes it very adviſable, if not abſolutely neceſſary, and eſpecially when the plants are moved with none, or very little mould about their roots.

A *hot-bed* for theſe, as it is moderate, may be covered with hoops and mats, and do very well, or rather better than frames and glaſs; for it often happens, that annuals are

are kept *too* close, by which they become weak, and get ſtunted when planted out in the free air, which, by over-nurſing, is made as it were unnatural to them. Towards the end of *April*, almoſt any of them will come up under *hand-glaſſes*, or even without, on a warm border, in a light and rich ſoil; but they will blow late, and be not near ſo ſtrong. The *Chineſe hollyhock*, though it will certainly come *up* well at this late ſowing, will be hardly able to make a ſhow before winter. Thoſe flowers of this claſs, however, that have been mentioned to be occaſionally conſidered as hardy, may be thus treated for a *ſecond* blow.

Other modes of cultivation are, that a few of the leſs tender ſorts may be ſown in pots, and placed (not plunged) in any hot bed that is in work for other things; but they muſt not be kept cloſe, or hot, which would draw them up weak: This plan may do for them a little while, and a ſlight heat may be got ready to prick them out upon, when air may be given them freely, and by no means keep them cloſe.

Again, both this claſs of annuals, and the former, if not very early ſown, do exceeding well, (or rather beſt) when on *hot beds*, under *hand-glaſſes*, or *paper lights*, particularly *balſams*.

What was ſaid of *tender* annuals apply here, as to *air*, *water*, and *cover*, but more freedom in the preſent caſe is to be taken. If any are under *mats*, the cover muſt be removed on days, except the weather be bad: or it may be only turned back, and half off, to let the ſun and light in from the *ſouth*. Never let either the *ſeeds* or *plants* of annuals really want *water* when the weather is dry. See page 55. See *Liſt* 8 in the next Section, with the obſervations.

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The HARDY annuals have ſome little difference in their temperature. Though all may be ſown from the middle

middle to the end of *March*, as the beſt average ſeaſon, ſome may generally, with ſucceſs, be ſown at *Mid-February*, as *candy tufts*, *cornbottles*, *larkſpurs*, *hawkweed*, *lavatera*, *lobel's catchfly*, *lupines*, *dwarf lychnis*, *nigella*, *ſweet peas*, *poppies*, *mulberry-blight*, *oriental mallow*, *perſicaria*, *ſun-flower*, *annual ſnap dragon*, *Venus's looking-glaſs*, and *navel-wort*, *virginian*, or *annual ſtock*, and *winged peas*, with ſome others.

But *nature* ſeems evidently to direct an *autumn* ſowing, for *many* ſorts which are then ſhed (ſome always, and others often) come up at ſpring, and theſe make the fineſt *blow*, and produce the beſt *ſeed* for propagation. A number, (all the above ſorts) therefore, might be ſcattered on the ſurface of the ground at random, not immediately as ſoon as ripe, but kept a *little* while to harden: This however is not a common practice, as gardeners like to have their borders at liberty to ſpring dreſs before they ſow their annuals.

For the *ſpring* ſowing, (about *Mid-March*) the ground being deep dug, and *well* broke, make hollows (by drawing the mould aſide) of from ſix to twelve inches diameter, or more, according to the ſize of the garden, as large ones ſhould have the biggeſt patches. Sow thin, and cover according to the ſize of the ſeed, from a quarter to an inch deep. Take out mould enough to leave the patches ſomewhat hollow, which will ſerve to ſhow where they are ſown, and to receive the rain, or occaſional watering. It may be proper alſo to put a bit of ſtick in the center of each, as a mark, that the ſeed may not be diſturbed. If the plants come up crowding, be ſure to thin them ſoon, and leave only a number ſuitable to their uſual ſize of growth; as one of the *belvidere*, *cornbottle*, *perſicaria*, and *ſun-flower*; two of the *lavatera*, *oriental mallow*, *mulberry-blight*, &c. three *larkſpurs*; and four of leſs plants. *Annuals* are very often ſown *too* thick, and ſuffered to ſtand *too* cloſe for flowering, and that altogether not by neglect, but choice; yet a few ſhort ſtrong plants with fine

fine full flowers, are ſurely better than many tall dangling weak ones.

A ſecond, or even a *third*, ſowing of hardy annuals may be made, at two or three weeks between, to continue the blow, eſpecially of thoſe that come early, and are ſoon off: *Mid-May* is not too late. The *lark-ſpur*, for inſtance, will make a long ſhow with us, by *autumn*, and *early* and *late ſpring* plants; in ſhort of every flower that blows in *ſummer*, there may be three ſowings, and two of thoſe that come early in *autumn*, in order to a *full* ſucceſſion.

Hardy annuals do not in general *tranſplant* well, ſo ſhould be ſown where they are to remain, and they muſt have a good ſoil in order to ſucceſs. Take care to ſow the *talleſt* growing ſorts *behind*, and the *loweſt* in *front*, and to form the patches at a ſufficient diſtance from one another, that the ground may be ſtirred and raked between them. A garden may be *too* full of flowers, which it certainly is, if the earth is not ſeen diſtinctly round about them: for when that is clean and freſh, all things growing in it appear more lively: It is, as it were, the back-ground of a picture. A few hardy annuals may be ſown in *pots*, ſetting them where they have only the morning ſun, and when in flower, they will ſerve to put into any particular place, for ornament, or be turned out into the open ground, where ſomething may be wanting.

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2. OF BIENNIALS.

There are but a few of theſe, and the principal ſorts will be found in the *liſt* of them, *next ſection*, where obſervations will be made on particular plants.

Theſe are to be *ſown* in drills, or in beds, at broad-caſt, the latter end of *March*, or beginning of *April*, where they have only the morning ſun, and the ground ſhould

ſhould be cool, or kept ſo by occaſional watering: The beginning of *May*, however, is not too late.

Thin the young plants on the ſeed beds a little, ſoon after they appear, to about an inch, and again to three or four inches aſunder, and keep them well weeded. They may either thus remain till *autumn*, to be planted out where they are to blow: or if they grow too ſtrong and crowding, let every other be drawn in *ſummer*, (chuſing a moiſt time, if poſſible) and planted out wider into nurſery beds for uſe in autumn, or the following ſpring: The latter ſeaſon will do for final planting, though the former is beſt, as the roots get eſtabliſhed in the ground; when if moved in the ſpring they meet with a check. It is beſt, if poſſible, to tranſplant with earth about the roots; but ſhorten all ſtraggling fibres, and cut off dead and rambling leaves. In *ſevere* winters, thoſe moved in *autumn* (if not very early) are ſometimes killed, and therefore a few may be reſerved to *ſpring*, in caſe of ſuch an accident; when being moved with good balls of earth, they will not be much checked. If planted late (as *November*) let them have fine well broke earth about the roots, and lay moſs, old bark, or ſmall ſtones round them for protection from froſt. Some of the *Perennials* might form another claſs, and be called *Biennial-Perennial*, &c. from their uncertain continuance.

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3. OF PERENNIALS.

This claſs (as has been obſerved) is very numerous, and the plants are propagated, many of them by their *roots*, according to their nature, as fibrous, bulbous, &c. ſome by *layers*, *ſuckers*, *offsets*, *ſlips*, *cuttings*, and a few by *ſeed* only. All ſorts (bearing ſeed) are occaſionally propagated this way, for *new varieties*, or to produce *finer* plants, as thoſe from ſeed generally prove, with reſpect to ſtrength, ſymmetry, and flowers. It happens,

happens, however, when propagated from *ſeed*, that though ſometimes a better, more frequently a leſs beautiful flower is produced of many ſorts; and this is the reaſon why the other modes of propagation are ſo much adopted, by *offſets*, &c. as thus they come identically the ſame with the mother plant. Another obſtacle againſt ſome ſorts being ſown is, that they are ſeveral years before they come to bear, as all bulbous, and tuberous rooted flowers.

The *Dutch* have made themſelves famous by their patience and perſeverance in raiſing *bulbs* and *tubers*, and ſow every year ſome of each kind, which *pays* them well, when they meet with an eminently good flower. A new ſort of *anemone*, *auricula*, *carnation*, *ranunculus*, and even a *polyanthus*, will frequently fetch a guinea, and a *tulip*, or a *hyacinth*, ſometimes ten.

To *raiſe* bulbous and tuberous rooted flowers, they ſhould be ſown in boxes (ſuppoſe three feet long, two wide, and ſix inches deep) of light rich earth, about the middle of *Auguſt*, or *September*, and ſetting them in a ſunny ſheltered place not under cover. Sow *anemones* and *ranunculuſes* a quarter of an inch deep; *iriſes*, *colchicums*, and *cyclamens*, half an inch; and *tulips*, *fritillaries*, and *hyacinths*, near an inch deep, giving water in a dry time, ſo as to keep the mould ſomewhat moiſt, but not wet. A little hay may be kept over the ſeeds till the plants appear, which perhaps will be ſpring with ſome. Sowings may take place alſo in *March*, or *April*, removing the boxes in *May*, to where they may have only the morning ſun. Thin them a little, if they come up thick, and when the ſtalks die, put on half an inch of fine mould; and after the decay of the leaf next ſummer, they muſt be planted out in nurſery beds, (latter end of *Auguſt*) two, or three inches aſunder, (according to their nature) and ſome will blow the following year, as the *anemone* and *ranunculus*, &c. though the *hyacinth* will be four, or five, and the *tulip* ſeven or eight firſt. Theſe muſt be removed from the

the firſt nurſery bed to another, (as ſoon as their tops are decayed) and planted at ſix inches diſtance; and ever after treated as blowing plants. Keep them very clear of *weeds*, particularly the ſeedings; which protect in ſevere weather from froſt, or heavy rain, by mats and hoops. A reed hurdle, or ſomething elſe, put up at the *N. E.* end, to break off the wind *when* it is harſh, will be proper.

Fibrous rooted, &c. *perennials*, if propagated from *ſeed*, are to be treated as *biennials;* but they are moſtly increaſed (as obſerved) other ways, with leſs trouble, and *chiefly* by parting the roots in *autumn* and *ſpring*, or by rooted ſlips or offsets, ſhortening their ſtraggling fibres. Many of them have creeping roots, and increaſe ſo faſt, that it is neceſſary to take them up every three or four years; and a removal of this ſort is proper for moſt perennials, in order to greater neatneſs, and a ſuperior cultivation; for though large tufts look handſome, they may be *too* bulky, and ſome kinds are apt to rot (as *bachelor's buttons*) when thick, the ſtalks and flowers come weak, and the leaves, toward the bottom, turn yellow.

In the *next ſection*, is a liſt of the moſt common, ornamental, or curious *perennial* flowers, (eaſy of cultivation) having *fibrous* and *fleſhy* roots, of which not all the ſorts are named, but thoſe only which ſeemed moſt worthy for ſelection.

The general culture of *bulbous* and *tuberous* roots is, to take them up *annually*, ſoon after they have flowered; when their leaves and ſtalks turn yellow and decay, then the root is at *reſt*, and its fibres die. When firſt taken up, lay them covered in dry ground for a few days, and then clean and harden them in the ſun, (if not exceeding hot) when they muſt be ſtored in a *dry* place, till wanted: damp is apt to rot them. Never put many together, or into earthen veſſels for keeping them, leſt they mould and ſicken.

It

It is not *abſolutely* neceſſary to take bulbs and tubers up every year, as every ſecond or third may do; but it is the common practice of gardeners to do ſo, becauſe it gives an opportunity to remove the *offſets* for propagation, and the mother bulbs are thus ſtrengthened, as alſo from the renewed ſoil they meet with by a freſh plantation. Some people ſuffer bulbous roots to remain *many* years without taking up; but then they cramp and ſtarve one another, and are apt to go off from their original beauty.

Bulbs and *tubers* may be either replanted immediately on being taken up, or kept out of ground during their natural periods of reſt; or for ſome ſorts even longer, as *Anemony* and *Ranunculus*, for ſeveral months. *Autumn* flowering bulbs are to be taken up in *May*, if their leaves are decayed.

Spring flowering bulbs ſhould be replanted in *September* or *October*; thoſe of the *ſummer* in *October*, or *November*; and thoſe of *autumn* in *July* or *Auguſt*. A little before, or after, is not very material; only when they are put in too ſoon, the Spring ones come ſo forward as to be liable to be damaged in ſevere winters, and ſprings; and when kept out of the ground too long, the bulbs ſpend themſelves firſt in making roots. The *ſcaly* bulbs (as lilies) ſhould not be kept out of the ground above a month or ſix weeks. Thoſe that flower in *ſummer*, may be put in the ground at different times, as early and late in *autumn*, and early in the new year, (not later than *February*) to obtain a ſucceſſion of blow. If any are put in at the end of *February* or beginning of *March*, they ſhould remain two years for increaſe. This is a common practice with the *anemone* and *ranunculus*; but when planted in *winter*, the ſoil ſhould be a *dry* one, or made ſo, by digging in a good quantity of fine ſea-coal aſhes, and coarſe, or drift ſand; elſe they are apt to rot, if much wet falls, before they have ſtarted fibres, eſpecially when followed by

ſharp

ſharp froſt. They may be protected from wet by mats, and from froſt by peas haulm, or wheat ſtraw.

Offsets of *bulbs*, and weak *tubers*, muſt be planted a month before the full-ſized roots; and as they are not expected to flower the firſt year, ſhould be diſpoſed of in *nurſery* beds, (rather cloſe) where they may grow a year, or two, according to their ſtrength, as ſome will be this time, or longer, before they flower. Thoſe taken from *ſcaly* bulbs, will not endure to be out of ground, and muſt therefore be planted almoſt immediately. *Bulbs* taken up *out of ſeaſon*, i. e. when they have remained ſo long in the ground as to have ſtruck out freſh roots, ſhould be removed with balls of earth, for though they may live without this care, they will be exceeding weak; it is therefore neceſſary exactly to obſerve the *proper* ſeaſon for removal.

The ſoil that beſt ſuits *bulbous* and *tuberous* roots in general, is a ſandy loam; but moſt of the ſorts are not very nice. The ground for them ſhould however be well dug, even two ſpades deep, that their fibres may ſhoot freely, and wet be completely drained from them, when much of it falls. This work ſhould be done a week before planting, that the ground may ſettle. In a light ſoil, roots of the *ranunculus* have been found to ſtrike a yard deep, which may admoniſh, that in a clay bottom, it is proper to lay a body of ſtones there, (ſuppoſe at eighteen inches) that too much moiſture may not be detained to ſicken the roots.

The *depth* at which *bulbs* ſhould be planted, muſt be according to their ſize, three or four inches deep, from their top. *Tubers* alſo according to their ſize; *anemones* and *ranunculuſes* at two, or two and a half inches, &c. Some bulbs will come up even when a foot below the ground, as *crown imperials*, and *crocuſes*, at ſix inches, or more; ſome perſons, therefore, plant them deeper than the above rule, in order to be able to ſtir the ſurface of the ground without damaging them, but it is not adviſable.

The

The proper *diſpoſition* of bulbous and tuberous roots, is either in *beds* (a trifle rounded) of from three to four feet and a half wide, for the *curious* ſorts; or in *patches*, to form cluſters of three, four, or five, agreeable to the room they require. There ſhould be only one in a place (generally) of the white, or orange lily, crown imperial, and ſuch like large bulbs.

In *beds*, the fancy ſorts of *bulbs*, and *tubers*, may be ſet in rows, eight or nine inches aſunder, and from five to ſeven inches in the rows, according to their ſize. The diſtance of four inches apart is, however, by ſome floriſts, thought ſufficient for *anemones* and *ranunculuſes*; but certainly more were better, where a ſtrong blow is a firſt object. *Hyacinths* ſhould be planted at ſeven, or eight, though they are more commonly ſet at ſix inches. *Tulips* ſhould be at eight, or nine, though ſix is often all that is allowed them.

When *planted*, if rain does not come in about four days, beds of bulbs and tubers ſhould be watered, to ſet them growing, that they may not mould and rot.

Though *bulbs* may be planted by a *dibble*, (taking care that the earth does not lay hollow about the roots) a better way is, to draw *drills*, and place them in, giving them a gentle preſſure into the ground, and covering neatly up. A little free *ſand* may be ſtrewed along the bottom of the drills, under *hyacinths*, *anemones*, and *ranunculuſes*, if the ſoil is not a dry and light one. The *beſt way* of planting bulbs is, however, to draw the mould off the bed to a *ſufficient* depth; then lay the ſurface perfectly level; give a watering; and when the top is a little dry, mark it out into proper ſized ſquares; then place a bulb in the middle of each, and carefully cover up, ſo as not to throw them on their ſides: Give the whole a little preſſure with the back of a ſpade to faſten the mould.

Bulbs and *tubers* in *beds*, may conveniently be *protected*, when in *flower*, from rain and ſun, by an *awning*, which will continue them in perfection of blow

blow much longer than if always expoſed. When theſe flowers, in beds, firſt break ground, if the weather is ſevere, they may then have an *awning* of mats, or cloth, occaſionally over them; or a little peas *haulm*, or wheat *ſtraw*, laid thinly on, juſt to protect them in their tender ſtate a little; this regards particularly *nights*, for on *days* a cover ſhould not remain on in tolerable weather. But *before* the ſhoots appear above ground, valuable beds of theſe flowers ſhould be ſheltered from having much wet, (even all through winter) as moiſture gives *froſt* ſo great power. If a body of *ſnow* lies on, it ſhould not be ſuffered to melt there when it thaws.

Spring flowering *bulbs* may be brought forward by planting them in *pots*, or in *water-glaſſes*, and ſetting them in warm rooms, or hot-beds; and thus, even in *winter*, we may have ornaments and ſweets that court our admiration. The great variety of *hyacinths* and *polyanthus narciſſus*, furniſh us amply in this way; but *other* early bulbs may alſo be thus forwarded. *Pots*, placed in a light warm *kitchen* window, may be brought forward to make their blow in the parlour; or if placed in any window, open to the *ſouth*, it will forward them. Theſe ſhould be potted in *October*, and have a light dry ſoil, occaſionally giving water. Bulbs may be put in *glaſſes* at this time, and once a month after, to *February*, for a ſucceſſion. Let the bulb juſt touch the water, which ſhould be ſoft, and repleniſhed ſo often as to keep it up to the bottom of the bulbs. Let it be completely changed about once a week; and if a bit of *nitre*, the ſize of a pea, be put in each time, it will ſtrengthen the blow.

Though *bulbous* flowers are propagated plentifully by *root* offſets, yet ſome are increaſed from little bulbs formed on the ſides or tops of the *ſtalks*, as the *moly* tribe, and the bulbiferous *lily*. Theſe ſhould be taken off in *Auguſt*, dried a little in the ſun, and then planted in nurſery beds as *offſets*.

Bulbs, propagated from *offsets*, produce a flower exactly like the parent; and *varieties* are only to be obtained from *seed*, which never produces flowers quite like the original the seed came from.

Let *seed* be saved only from choice flowers, be thorough ripe, and being hardened a little in the sun, may be sowed soon after, in pots, or boxes, of good light earth. See page 284. Persons of leisure and curiosity, would do well to amuse themselves in this way, that we may not be so much indebted to *foreigners*, for a supply of new flowers.

An *observation* may be here made, that the *same* bulb (as is often thought) does not always continue; for some are *renewed every* year, as the *tulip*; and others the second, third, &c.; so that when taken up to remove *offsets*, the principal bulb of the tulip, &c. which is commonly esteemed the old one, is, in fact, a *new* formed one, though (perhaps) not less in size, and it may be bigger.

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As many SHRUBS (i. e. woody plants) are propagated in a view principally to their *flowers*, they will properly enough be considered a little here, as to their propagation. See section 9.

The *deciduous shrubs* that are most usually cultivated for their ornamental nature, will be found in the lists of the *next section*; and their modes of *propagation* are denoted thus :—*b.* budding—*c.* cuttings—*g.* graff—*l.* layers—*r.* roots—*s.* seeds—*sl.* slips—*su.* suckers—by *r. roots*, includes *offsets*.

Of the various methods of *propagating* trees and shrubs, that by *seed* is the best, where it can be adopted (as has been observed) and the season is *autumn* or *spring*. If in *autumn*, it may be earlier, or later, as the seeds ripen; for soon after they are ripe is the most proper time to commit them to the earth, covering the smaller

ſmaller ſeeds from half to a full inch; kernels, nuts, &c. from two to three inches, according to their ſize. Any ſort that it is doubted will ſtand the winter in ſeed-beds, may be ſown in *pots*, or *boxes*, ſet in a garden frame or houſed in ſevere froſts. If in *ſpring*, (as it is a good rule to ſow a little at *both* ſeaſons, and ſome tender ſorts *require* the latter) the ſeed muſt be *carefully* kept from damp and vermin, and put into the ground towards the end of *February*, or early in *March*. The ſeeds of ſome of the more delicate ſorts will require to be ſown, at this ſeaſon, on a ſlight *hot-bed*; and if a few of *moſt* of the ſorts were thus treated, it would be a good method, to inſure their germination, and to forward them. Let ſpring ſown ſeeds be watered occaſionally, according to the weather, to keep them moiſt. The earth they are ſown in ſhould be moderately light, dry, and rich, and formed into beds of four feet wide, either in *drills* or at *broad-caſt*, firſt drawing earth off into the alleys, to cover with. See p. 69, 71.

American trees and ſhrubs do very well in this climate, but the young plants are generally tender, and ſhould have ſome protection, one, two, or three years, till they get woody, and inured to the climate.

For *graffing* and *budding*, (as ſome ſhrubs are propagated this way) ſee the ſection *On Graffing*; and for the propagation by *ſuckers*, *cuttings*, *layers*, &c. ſee ſection 5; about *ſuckers*, ſee pages 64, 111. Thoſe trees, or ſhrubs, from which *cuttings* of the *ſame* year's growth may be had in *June*, or *July*, may be greatly helped to ſtrike root, by covering them *cloſe* with a *hand-glaſs*; (as directed for the *arbutus*, liſt 5, ſect. 19) and if a glaſs were put over *layers*, that are difficult to ſtrike, it would help them.

This mode of *propagation* is particularly adapted to ſome ſorts of *evergreen* ſhrubs, which emit fibres more freely from the *youngeſt* wood. If year old wood is treated thus, the cuttings may be ſet early in ſpring; or glaſſes may be put over thoſe put out in autumn.

But ſpring cuttings, treated as the *arbutus*, is the ſureſt method to make difficult ſorts ſtrike root.

It may prove an *obſervation* of ſome uſe, that trees and ſhrubs raiſed from *ſeed* grow the largeſt, from *layers* generally leſs, and from *cuttings* the leaſt. Where *budding* can be practiſed, it is preferable to *graffing* for the propagation of ſhrubs.

For *planting* and *managing* ſhrubs, &c. ſee ſection 9. For *pruning*, ſee page 166.

SECTION XIX.

LISTS OF TREES, SHRUBS AND FLOWERS.

*** The names of the choiceſt ſorts of *fruit trees*, will be found in ſection 17.

THE *modes of cultivation* are here directed by the letters, as in laſt ſection; adding m. for *moiſt*, w. for *wet*, and d. for *dry*. Thoſe not marked are to be underſtood as (pretty much ſo) *indifferent* as to ſoil, and indeed thoſe marked otherwiſe *may* grow in a contrary kind, and often do, though not ſo flouriſhingly, or ſafely as to extremes of heat or cold.

The *time of flowering* is annexed to thoſe trees and ſhrubs that are *thus* at all ornamental, and the more *ordinary heights* they are found to attain are denoted in the *arrangement*; a circumſtance hitherto much wanted, as uſeful and *neceſſary* to be known, in order to a right diſpoſal of them. Thoſe of a naturally low growth have been, ſometimes, planted behind in *ſhrubberies*,

berries, &c. and the taller forward; but yet this unfortunate circumſtance muſt be unavoidable to every inexperienced planter, who has no other guide, than that this is a *tree*, and that is a *ſhrub*, which are vague, indefinite terms as to ſtature.

The *colours* of the flowers are generally mentioned, as agreeable to be known, and of uſe in the diſpoſal of trees and ſhrubs at planting, to diverſify the ſcene with more propriety. In a few inſtances the flowers, either as to time or colour, are not noticed as being too inſignificant to be ornamental, though the fruit, or foliage, or both are.

Such *obſervations*, as may be thought moſt uſeful and neceſſary, will follow each *liſt*; but as neither *all* the ſorts, nor the *varieties* of each ſort, could be enumerated in ſuch a work as this, ſo alſo the *minutiæ* of propagation, &c. is more than could be comprehended, or expected: Folio volumes (ſo copious is the ſubject) have left a variety of plants unnoticed, and much unſaid reſpecting cultivation. For *ordinary* uſe, a greater enumeration, or more enlarged particulars, would indeed have made the book *leſs* valuable. If the *ſelection* and information is good, (and pains have been taken in the buſineſs) thoſe for whom this book is deſigned, will have no reaſon to complain.

The *names* of trees, ſhrubs and flowers, are in many caſes various, as ſometimes a *ſcientific* name prevails, and at other times a *trivial*; and of neither is there a perfect agreement, for of both there is often more than one. The object therefore here has been, to give *that* name by which each is ſuppoſed beſt known. Different plants are ſometimes called by the ſame name, and a nice diſcrimination is made by botaniſts, according to *flower*, *leaf*, &c.; but theſe are no farther noticed than neceſſary. Such deſcriptions are given of each, as cannot (it is hoped) fail to identify the ſort, when applied for to any nurſeryman.

In the following *lists* of *trees*, the *larger* are marked with an *asterism*; and in the *lists of shrubs* and *flowers*, discrimination of size is made by *figures*, each being divided into four sorts, as to *height*; the lowest are marked No. 1. But it is ever to be understood, that the *soil*, and other circumstances, will make a difference, as to stature; so that the greater *may* become the less, and the less the greater.

Where &c. is affixed to sorts, it means that there are others; and where it is added to the time of flowering, it signifies of more than one month's duration. It is the nature of some things to keep in blow nearly all summer; to encourage which, and to strengthen the plants, dead or dying flowers should be speedily taken off, as they occur. See page 56.

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I.

LIST of *deciduous trees*, usually called *forest*, or *timber* trees, serving both for use and ornament:

Abele, is the white *poplar*; *Aspen* the tremulous poplar
* *Alder*, common, hoary leaved, American, &c. *c. l. f. w.*
* *Ash*, common, and American white, red and black, *f.*
* *Beech*, common, and American purple leaved, *f. l.* d.
Birch, com. white, Virginian, and Canadian, &c. *f. l. su.*
* *Chesnut*, edible Spanish, and common horse, *f.* May.
* *Cypress*, deciduous, or Virginian swamp, *l. f.* w.
* *Elm*, small and broad leaved, wych, or Scotch, &c. *f. l. su.*
Hickery Nut, smooth white, and rough barked, *f.*
Hornbeam, common in variety, as to leaf, *f. l.*
* *Lime*, common, red-twigged, black American, &c. *l. c. f.*
* *Larch*, common red, white and black American, &c. *f.*
* *Maple*, greater, Norway, and Italian, *l. f. su.* May.
——— Sugar, plain tree, mountain, &c. ditto
——— for other sorts, see the lists 2 and 5.
Medlar com. German, Nottingham and Italian, *f. l.* May
Mountain ash is sometimes a forest tree, see next list
* *Nettle tree*, as next list, grows large, and is a forest tree
Nut tree, common hazel, or any orchard sort, *l. su. f.*

* *Oak*

* *Oak* Engliſh, American ſorts, Spaniſh, Italian, &c. *ſ.*
* *Plane*, Eaſtern, Weſtern, middle or Spaniſh, *ſ. l. c.* May
* *Poplar*, white, black, tremulous, and Carolina, *c. l. ſu.* m.
* *Service tree*, the wild or maple leaved, *ſ. l.* June
* *Sycamore*, is the great *maple*, which ſee.
* *Walnut*, the common, or royal, and black Virginian, *ſ.*
* *Willow*, white, or ſilver leaved, purple and ſweet, &c.

*** For *underwood* amongſt foreſt trees, the uſual ſorts are *alders*, *aſh*, *beech*, *birch*, *hazel*, *hornbeam*, *ſallow*, *willow*, and ſometimes the *wych-elm*, *common maple*, *poplar*, and *ſycamore*.

OBSERVATIONS ON PARTICULAR TREES.

Alders, cuttings of it grow readily, and may be thick truncheons a yard long, pointed, and thruſt into ſoft ground half way, or into a hole made with an iron bar. This is the way alſo to propagate *poplars*, *willows*, and *ſallows*; alſo *elders*. There is a dwarf alder.

Aſh, the American ſorts do not grow near ſo large as the common Engliſh. For the *ornamental* aſhes, ſee the next liſt.

Birch is reckoned the worſt of timber, yet the wood has its uſes in ſeveral particular buſineſſes. The *American* ſorts grow much larger than the *Engliſh*. The tree is of that accommodating nature, that it will grow in any ſoil or ſituation, wet or dry. It is well known, that a *wine* is made of its ſap, by boring holes in full grown trees in ſpring, before the leaves come out: from a number of trees a great deal may be collected. Without being unpleaſant, (if properly made) *birch* wine is reliſhed by many, and is reckoned very medicinal in ſcorbutic, and other complaints.* There is

* It has been the wiſh of the author to ſpeak of the *medical properties* of many plants that have occurred in this work, but room could not be allowed it. The *proceſs*, &c. of birch wine, with the *properties* of moſt plants, will be found in *Meyrick's Family Herbal*, 8vo. a good book.

a method of catching the liquor, by putting into the holes (deeply bored) *faucets of elder*. See next liſt.

Cheſnut, ornamental. See the next liſt.

* *Elm*, the wych is the quickeſt grower, and will flouriſh in any ſoil; but the broad leaved is reckoned the beſt timber, and the ſmall leaved the moſt ornamental; it ſhould have a good ſoil. The *wych* is eaſily raiſed from ſeed, (ſown directly after it is ripe) but the other ſorts are propagated from ſuckers, or layers, or graffing on the *wych*. In order to obtain *ſuckers*, and ſhoots for layers, *ſtools* are to be formed by cutting down ſome young trees, almoſt cloſe to the ground. Trees from layers are better than from ſuckers. Obſerve, that *whatever* is to be propagated by *layers*, or *ſuckers*, making *ſtools* is the way to procure them.

Hornbeam, the common ſort will grow very large in ſome ſoils, but the *Virginian* (flowering yellow) will hardly reach thirty feet, and the *hop* not above twenty. The *hornbeam* feathers down lower and thicker than any other tree, and the property of holding its decayed leaves on all winter, adapts the common ſort for a ſcreen from winds. See page 111.

Nut tree, as timber, will be beſt propagated from nuts, either to remain where ſown, or planted out while young, keeping the ſtems trimmed up, free of ſhoots, to about five or ſix feet, (according to ſtrength) and then to form a head, topping the leading ſhoot for the purpoſe, which will occaſion ſeveral branches to proceed from the upper eyes; and this is the way to form all ſorts of trees to good heads.

Oak, the *Engliſh* produces the beſt wood, but the *American* ſorts are the faſteſt growers, though they do not attain to the ſize of the *Engliſh*. A cool ſtrong ſoil produces the handſomeſt trees, and tougheſt timber. Oaks ſhould not be above three or four years old before they are planted, for the older they are, the more check they receive, and it is a tree that does not tranſplant well. Hence all the care ſhould be taken that can be

in

in the buſineſs. See *ſection* 10. But oaks ſucceed beſt without removal, having a *tap*, or downright root, which is frequently broke in taking up: *All* trees would probably thus come finer, if it was convenient. The conſequence of preſerving the tap has been ſuſpected; but it is certainly Nature's direction, for rather than give up the point, the tap of the oak will make its way downward, in a direct line, through the hardeſt ſoils. See page 80.

Poplar to propagate by cuttings, ſee *alder*; but younger and ſmaller cuttings for this tree do better, as thoſe of one or two years old, and half a yard long: The black poplar does not ſucceed well by truncheons.

Walnut, when planted for timber, ſhould be young, and the tap root, if poſſible, preſerved whole. The black virginian grows more erect, but the other makes the largeſt tree, and beſt wood. The white Virginian is the *hickery nut*. All theſe make the beſt trees, when grown from ſeed without tranſplanting.

Willow and *ſallow*, to propagate by cuttings, ſee *alder*.

*** Of all the *foreſt trees* here mentioned, the *aſh*, the *beech*, the *elm*, and the *oak*, are the principal; and to plant theſe, and others, is a work of the moſt commendable, and eventually of the moſt profitable kind. See pages 78, 112, 119, &c.

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II.

LIST of large *deciduous trees*, conſidered chiefly as *ornamental*, for pleaſure grounds, &c.

* *Acacia*, triple thorned, fewer thorned, &c. *f. l. c. ſu.* July
* *Aſh*, Calabrian manna, and large flowering, *f. gr.* Apr.
—— weeping and variegated, wh. and yel. leaved, *b. gr.*
—— dwarf flowering (ſmall white bunches) *f. gr.* May
* *Beech*, white, and yellow ſtriped leaved, *b. gr. in.*

Birch, weeping or pendulous twigged, *f. l. su.*
Buckthorn, common purging berried, *l. su. c.* May
* *Catalpa* (tree bignonia) or trumpet flower, *c. l. f.* Aug.
Cherry, the bird, common and Corniſh, &c. *f. b. gr.* May
——— Cornelian, male cornus, or cornel, *f. c. l. su.* Apr.
* *Cheſtnut*, ſcar. and yellow flow. ſtrip. leaved, *f. b. gr.* May
Date-plum, or *perſimon*, is the *piſhamin* below.
* *Elm*, pendulous twigged and variegated leaved, *l. gr.*
Frangula, alpine and berry bearing alder, *f. c. l. su.* June
Gleditſia is the *acacia* above, which ſee.
Hornbeam, variegated, hop, and oriental, *gr. f. l.*
Laburnham, com. broad and narrow leaved, *f. c. l.* May
Larch, or the deciduous *pine*, ſee laſt liſt.
* *Lime* (or linden tree) with variegated leaves, *l. c. gr.*
Magnolia, umbrella, glaucous leaved, &c. *f. l. c.* June. *d.*
Maple, ſcar. flowering, and mountain, *l. f. su.* May
——— Cretan or Levant, and Tartarian, ditto.
Mountain aſh, or bird's ſervice, pl. and ſtrp. *f. l.* May
* *Nettle tree*, black, and purple fruited, *f. l. su.* May
* ——— bloach leaved of both ſorts, *gr.* May
* *Oak*, ſtriped, and red leaved Virginian, *b. gr. f.*
Piſhamin plum, or date, European, *l. f. su.* May, *d.*
* *Piſtachia nut*, or com. turpentine tree, &c. *f. l.* May
* *Poplar*, with variegated or ſtriped leaves, *c. l. gr.*
* *Robinia*, com. or falſe acacia, wh. flow. *f. c. l. su.* June
——— for other ſorts, ſee the following liſt
* *Service tree*, or ſorb apple, true, and baſtard, *f. l.* May
Tacamahacca, or balſamic poplar tree, *c. l. su.*
* *Tulip tree*, ſometimes called lily flowered, *f. l. su.* July
Viburnham, or meally way-faring tree, *f. l. c. su.* May
———American ſorts, and ſtriped, *b. gr. in.* May
* *Willow*, weeping, ſhining leaved, and yel. twigged, *c.*

*** Theſe *ornamental* trees are proper to plant at the back of ſhrubberies, &c. and here and there one on the ſkirts and fronts of *woods*, or *plantations* of timber, and along the *boundaries* of grounds. Here they will appear to great advantage; but more ſo, if planted *ſingly* in detached ſituations: Moſt of them are good wood for timber, ſerving one purpoſe or other.

OBSERVATIONS ON PARTICULAR TREES.

Buckthorn, if raiſed from ſeed, ſow early in *autumn*, as ſoon as the berries can be procured, and perhaps ſome may come up the following ſpring, but moſt of them will lay another year. This is the caſe with other ſeeds, as *ſweet briar*, &c. See page 78.

Catalpa ſhould grow ſingly, that it may have its natural wide ſpread, and, if poſſible, let it be on a plat of graſs, where it will appear to great advantage. It is very hardy; but as it comes out late, it is adviſable to give it a favourable aſpect.

Maple, of the ſcarlets, there are the *Virginian* and ſir *Charles Wager's*, both very ornamental, but the latter moſt ſo. The *Mountain* hath ſhining leaves, and continues late in autumn.

Magnolias are to be conſidered as rather tender, eſpecially young plants. The glaucous leaved is of the loweſt growth, (about ten feet) but all are elegantly ornamental with their white flowers: There is alſo a blue flowered one. Let them have a dry ſoil, as all tender plants ſhould, as well as a warm ſituation.

Mountain aſh produces its white flowers in *May*. Its foliage is pretty, and its fruit of red berries is one of the greateſt ornaments of autumn, coming very early, and hanging all winter, *if* the blackbird, &c. will let them alone. As it deſerves the moſt conſpicuous ſituation, it will be proper to plant ſome near the houſe, and moſt frequented places, where birds may be diſturbed from their too frequent viſits.

Piſhamin, or *date plum*, is chiefly cultivated here as ornamental for its ſhining leaves; its fruit is, however, eat by ſome, like the *medlar* and *ſorb*, in a ſtate of decay. Houſe young plants in pots the firſt winter: Allow this tree a dry ſoil and ſhelter.

Piſtachia, this is the hardieſt of three ſorts. Treat it as a tender plant, whilſt young, for three or four

years, and let it have finally a ſheltered ſituation from wind, and a dry ſoil.

Tulip tree is tender whilſt young, but afterwards very hardy; is uncertain in flowering, but handſome in its leaf and growth, and has been uſed to be planted ſingly on lawns, &c. It is a native of *Virginia*, where it attains to ſo vaſt a ſize, as to be from twenty to thirty feet in girth, though here it keeps pace only with an ordinary elm.

Virburnham, or way-faring tree, is very pretty, in its hoary leaves, and white flowers, ſucceeded by fruit in autumn, in bunches of red berries. The *American* ſorts grow not near ſo high, but they rarely ripen their berries here. The *variegated* ſort does not grow ſo large as the plain, which is the caſe with all ſtriped plants. See next liſt.

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III.

LIST of ſmaller *deciduous trees*, or *ſhrubs* of tree growth, *ornamental* for pleaſure grounds.

* *Almond tree*, ſweet and bit. red and wh. flow. *f. b.* April
* ——— oriental ſilver leaved, *f. b.* April
Amorpha, or baſtard indigo, pur. flower, *f. ſl.* June
Andromeda, tree ſort, or Carolina ſorrel tree, *l. ſu. f.*
* *Apple*, Siberian and Virginian crabs, *f. gr.* May
* ——— Tartarian crab, beautiful large fruit, *gr.* May
* ——— double flow. Chineſe (*Pyrus ſpectabilis*) *gr.* May
——— American, very ſmall or berry crab, *f. gr.* May
Aralia, thorny, or Angelica tree, yel. flow. *f. r.* Aug.
* *Azarole thorn*, Virginian cockſpur, &c. *f. l. b. gr.* May
* *Azederach*, com. bead tree, or paternoſter nut, *f.* July
Berberry, red, white, and black, ſee p. 263, *c. l. f. ſu.* May
Benjamin tree, or benzoin gum, yel. flow. *f. l. f.* April
Bignonia, ſee trumpet flower in this liſt.
* *Bladder nut*, five and three leaved ſorts, *f. ſu. l. c.* May
——— *ſena*, ſee colutea

Buckthorn,

Buckthorn, ſea, European and Canadian, *ſ. r. l.* June
Caragana, or Siberian robinia, yel. flow. *c. l. ſ. ſu.* May
Caſſiobury buſh, or baſtard caſſine, wh. flow. *ſ. l.* Auguſt
* *Cherry*, com. double white and bluſh flow. *b. gr.* May
——— weeping or pendulous branched, *ſ. b. gr.* May
* ——— *Mahaleb*, or perfumed cherry, *ſ. b. gr.* May
Chinquapin, dwarf American cheſtnut, or oak, *ſ. in.* May
Clematis, (a climber) ſee *virgin's bower.*
Colutea, com. or tree bladder ſena, yel. flow. *ſ. l.* July
* *Date plum* (piſhamin) Virginian, *l. ſ. ſu.* May, *d.*
* *Dogwood*, or bloody twig, com. and Virginian, *c. l. ſ.* June
* *Elder*, bl. wh. gr. and red berried and ſtriped, *c. l. ſ.* June
Gueldre roſe, often called ſnow-ball tree, *c. l. ſu.* May
* *Hawthorn*, com. doub. ſcarl. berried, &c. *b. gr. l.* May
* ——— *Glaſtonbury*, blows in the winter, *ſ. b. gr.*
——— Virginian thorned and thornleſs, *ſ. l. b. gr.* May
* *Judas tree*, com. and Canadian, pur. red, wh. *ſ.* May
Kidney-bean tree, Carolina, (a climber) blue, *ſ.* July *d.*
* *Lilac*, com. purple, blue and white flow. *ſ. ſu. l.* May
Medlar, woolly leaved, pur. fl. red fruit, *ſ. l. b. gr.* May
* *Nettle tree*, eaſtern vel. flow. and bloached, *ſ. l. c. gr.* May
* *Oleaſter*, narrow leaved, or wild olive, *l. c.* June *d.*
Peach, doub. bloſſ. as a ſtandard, no fruit, *b.* April
* *Pear*, doub. bloſſ. harſh baking fruit, *b. gr.* May
Plum, doub. bloſſ. and ſtriped leaved, *b. gr.* May
Privet, deciduous, plain and ſtriped, *ſ. ſu. l. c.* June
Robinia, or roſe acacia, ſcar. flow. *ſ. c. l. ſu.* May
——— ſhrubby quaternate leaved, yel. *l. ſ. ſu.* June
* *Spindle tree*, nar. broad, and ſtriped leaved, *ſ. b. c. gr.* Ap.
* *Stewartia*, or Malacodendron, white flow. *ſ. ſl. l. c.* June
Sumach, tanners, wh. fl. and ſtag's horn, red, *l. ſu. ſ.* June
——— Carolina ſcarlet, and Canadia red, &c. ditto
Tamariſk, French, with pale red flowers, *c. l. ſ.* July
——— Venetian, (cotinus) pur. flow. *l. ſu. ſ.* July
* *Trumpet flower*, (bignonia) ſcarlet and yellow, *c. l. ſ.* July
Viburnham, American ſorts, white flow. *ſ. l. c. ſu.* July
Virgin's bower, entire leaved, doub. pur. flow. *l. c.* Aug.
——— ſingle pur. blue, red ſtriped, *b. c.* July
——— ſee *clematis*, in the next liſt
* *White beam*, or white leaf tree, wh. flow. *ſ. l. ſu.* May

OBSER-

OBSERVATIONS ON PARTICULAR TREES, &c.

Andromeda tree is tender, and muſt therefore have a ſituation accordingly. It was always a part of the green-houſe furniture, but does ſometimes abroad; and it is very well to try what may be done with the *hardieſt* green-houſe plants.

Apple, theſe crabs produce rather ſlender wood, and therefore ſhould not be in a crowded, or ſhady ſituation, but rather, as much as poſſible, in detached ſingle plants. The fruit of the three firſt makes ſuperior *tarts*, and the latter an excellent *preſerve;* and the fruit of all of them may be introduced in the *deſert*, when full ripe. Allow the *double flowering* apple a good ſituation, to preſerve its charming crimſon blow as long as poſſible.

Azederach conſider as tender; its foliage is beautiful, flowers white, and fruit yellow.

Caſhiobury buſh muſt have a ſheltered ſituation, particularly the young plants, which ſhould be protected for two or three winters.

Spindle tree (ſometimes called *prickwood*) is very beautiful with its leaves in autumn, for which (as many other plants) it is chiefly conſidered as ornamental, its flowers making no ſhow. The ſeed lies two years before it comes up.

Stewartia, a fine ſhrub, a little tender whilſt young. *Layers* require two years to ſtrike. *Cuttings* manage as directed for *arbutus*. Seeds are imported from *Virginia*.

Trumpet flower, ſometimes called *ſcarlet jaſmine*, is a trailing plant, and therefore requires training to a wall for ſupport; or having ſomething to climb on it will proceed much in the way of an *honeyſuckle*. It is rather tender, and muſt have a good ſituation, but when properly managed is a great beauty. Prune it to a few eyes, preciſely upon the principle of a *vine*. The ſhoots will ſtrike into cracks of the walls and mount high where there is room. See *Catalpa*, laſt liſt.

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IV.

LIST of the lower deciduous trees and woody plants, called *ſhrubs*, cultivated for ornament:

2 *Almond*, dwarf, ſing. and doub. red fl. *f. ſu. b. gr.* April
2 ——— dwarf, with leaves hoary underneath, ditto
3 *All ſpice* tree, Carolina, or pompadore, *l.* May *d.*
1 *Allyſon*, prickly and hoary leaved, wh. *f. ſu. c.* July *d.*
4 *Althea frutex*, pur. red, white ſtrip. fl. &c. *l. ſu. f.* Sept.
3 *Amelanchier*, dwarf bl. fruited *medlar*, *f. l. ſu. b. gr.* May
2 *Andromeda*, ſhrubby, wh. yel. red and pur. fl. *f. l. ſu.* July
3 *Aralea*, herbaceous Canada and Virginian, *r. f.* June
4 *Azalia*, American honeyſuckle, wh. red, ſcar. *l. r.* July
4 *Bladder ſena*, Pocock's early deep yellow, *f. l.* June
4 ——— oriental, or the blood red, *f. l.* July
3 ——— ſhrubby Ethiopian ſcarlet, *f.* Aug. *d.*
——— ſee *colutea* in the laſt liſt, and below
4 *Bramble*, doub. bloſſomed, and wh. berried, *l. ſu. f.* May
4 *Briar*, ſw. ſing. doub. ſemi. pink and ſcar. *f. ſu. l.* June
2 *Broom*, com. Engliſh, Dyer's, and dw. Portugal, *f. r.* May
3 —— large Portugal, and upright, Montpelier, *f. r.* June
2 —— wh. flowered, trailing and upright, *f. r.* June
2 *Buckthorn*, dwarf purging berried, *f. l. c.* May
3 ——— long leaved dwarf ditto, *f. l. c.* May
4 *Button tree* (cephelanthus) American, *f. l. c.* July
2 *Clematis* (virgin's bower) upright wh. blue, *r. f.* June
4 —— oriental, climbing, yel. flow. *l. c.* May, &c.
4 *Candleberry myrtle*, wh. flow. blue berried, *f. l. ſu.* June m.
3 ——— dw. Carolina, br. leav. *c. l. f. ſu.* Ju. m.
4 *Chaſte tree*, nar. and br. leaved, pur. and wh. *l. c.* Sept.
3 *Cherry*, com. dwarf, and dw. Canada bird, *f. b. gr.* May
4 *Clethra*, alder leaved, full of wh. flow. *f. l. ſu.* July, &c.
1 *Cononilla juncea*, or ruſh-like Spaniſh, *f.* June
3 *Cotoneaſter*, (a medlar) dwarf quince, *f. l. b. gr.* May
4 *Coreopſis*, two American ſorts, yel. flow. *aff.* July, &c.
2 *Cinquefoil ſhrub*, (potentilla) com. yel. flow. *ſu. f. c.* June
1 ——— grandiflorus, and ſilvery, yel. fl. *r. f.* June
1 ——— wh. flow. upright, and trailing, *r. f.* June

3 *Cytiſus*, bl. baſed, and ſeſſile leaved, *ſ. c. l.* June, *d.*
3 *Elder*, dwarf, wh. flow. and black fruit, *ſ. c.* July
3 *Gale*, the ſweet willow, or Dutch myrtle, *r.* June *w.*
2 *Germander tree*, wh. yel. and pur. flow. *ſl. c. ſ.* July, *d.*
4 *Hawthorn*, gooſeberry leaved, yel. fruited, *ſ.* May
3 *Hamamelis* (witch hazel) Virginian, *ſ. l.* flow. in winter
4 *Honeyſuckle*, climbing Eng. wh. and red, *c. l. ſ.* June, &c.
4 ——— climbing Dutch red, early and late, ditto
4 ——— climb. Italian, wh. red, and yel. *c. l. ſ.* May
4 ——— erect fly, wh. flow. and red berry, ditto
3 ——— erect alpine, red flow. and red berry, ditto
3 ——— erect acadian *(diervilla)* yel. *l. c. ſ. ſu.* May
——— there are two climbing ſtriped leaved ſorts
3 *Hydrangea*, Virginian white flowering, *r. ſu.* Aug. *m.*
3 *Hypericum frutex*, br. and nar. leaved, *l. ſu. c.* June
4 *John's wort*, ſtinking, inodorous, and Canary, *ſu. ſ.* June
1 ——— large flow. ſomewhat tender, *ſu.* Aug.
4 *Itea*, Virginian, full of white flowers, *l. ſ.* July, &c.
4 *Jaſmin*, wh. fl. plain, and wh. and yel. ſtrip. *l. c.* June
4 ——— trailing yellow flowered, *l. c. ſu.* June, &c.
2 ——— erect dwarf yel. flowered, *l. c. ſu.* July, &c.
4 *Ivy*, deciduous five leaved, or Virginian creeper, *c. l. ſ.*
4 *Mallow tree*, com. ſhrubby lavatera, *ſ. c.* June, &c.
3 ——— three and five lobed ſhrubby, do. *ſ. c.* June
3 *Medlar*, dwarf alpine, red fruited, *ſ. l. b. gr.* May
3 ——— Canada, ſnowy, purple fruit, ditto
——— ſee *amelanchier* and *cotoneaſter*
2 *Mezereon*, wh. purp. reds and crimſons, *ſ.* Feb. &c.
2 *Orobus*, or bitter vetch, purp. and blue, *ſ. r.* Apr. &c.
4 *Perſian lilac*, blue and white flowering, *ſ. ſu. l.* June
2 *Poiſon oak*, common, white flowered, *r. l. ſ.* July
4 —— *aſh*, or varniſh tree, ditto
5 *Purſlane tree*, ſea, two ſorts, *c.* Aug.
4 *Pomegranate*, ſing. doub. and ſtrip. flow. *l. b.* in July
4 *Raſpberry*, common ſweet flowering, purple. *ſu.* July
2 *Reſt harrow*, com. ſhrubby purp. flow. *ſ.* May, &c.
2 *Rhododendron*, alpine, and Mount Baldis red, *ſ. c. r.* Sept.
3 ——— ferrugineous leaved, red flow. *ſ. c. r.* Aug.
2 *Robinia*, dw. quaternate leaved, yel. flow. *ſ. c. l. ſu.* May
Roſes: The *loweſt ſorts* are, dwarf Scotch ſingle red.—dwarf common ſingle white.—dwarf Penſilvanian ſingle and

and double red.—dwarf burnet leaved ſingle red and ſtriped.—roſe de meux.—crimſon Burgundy, and dwarf bluſh Burgundy.

Middling heights.—Cinnamon, ſingle and double, red—common red and white, ſingle and double, and ſemi-double—monthly red, bluſh, white and ſtriped—maiden's bluſh double—virgin pale red thornleſs—moſs provence double red—roſe of the world, ſemi-double ſtriped—velvet, double and ſemi-double.

Taller ſorts are,—Provence red, bluſh, and white double—damaſk white, red, and bluſh ſemi double—York and Lancaſter ſemi-double variegated—Auſtrian ſingle, yellow, and another ſingle, red one ſide, and yellow on the other—double yellow.

Talleſt ſorts are,—Apple bearing, ſingle and double red—royal red—Frankfort, purple red—great burnet leaved, ſingle red—Carolina and Virginia ſingle red—muſk, ſingle and double white.

4 *Scorpion ſena*, com. large, yel. flow. *c. l. ſ.* June, &c.
2 ——— common dwarf, ditto
4 *Snowdrop tree*, or fringe tree, white flow. *ſ. l.* June
3 *Spirea frutex*, com. willow leaved, pink, *ſu. l. c.* June
3 ——— downy leaved red, and wh. flow. ditto
4 ——— guelder roſe leaved, wh. flow. *ſu. l. c.* July
3 ——— Siberian and Spaniſh, wh. fl. *ſu. l. c.* May
3 *Sumach*, myrtle leaved, white flowered, *ſu. l.* June
Sun-flower, tickſeeded, ſee *coreopſis*
4 *Syringa*, large plain and ſtri. leaved, wh. *c. l. ſu.* May
2 ——— dwarf double-flowered, white ditto
4 *Tamariſk*, German, very pretty, red fl. *c. l. ſ.* July, &c.
——— for other ſorts ſee laſt liſt
Toxicodendron, ſee *poiſon oak* and *aſh*
Treet refoil, black baſe, (*ſcandus cluſii*) ſee *cytiſus*
2 *Tutſan*, or park leaves, (like *St. John's wort*) *ſu. ſ.* July
2 *Vetch*, wood, or ſylvan, wh. many flowered. *ſ. r.* Aug.
4 *Virginian ſilk*, variety, pur. flow. a climber, *c. l.* July
2 *Willow herb*, or French willow, pur. &c. *r. ſ.* July, *m.*
3 ——— ſee looſeſtrife, liſt XI.

*** As it is common to plant low herbaceous perennial flowers in the front of ſhrubberies, &c. ſo *amongſt* the ſhrubs, ſome of the loftier ſorts may properly be, though

annual in ſtalk, as the tall *aconites*, or *monkſhoods*, *aſters*, *everlaſting ſun-flower*, &c.

OBSERVATIONS ON PARTICULAR SHRUBS.

All-ſpice-tree muſt have a warm and dry part of the ſhrubbery. The whole plant is aromatic.

Aralia, thorny, is propagated by pieces of its large roots, and perhaps many other plants might be ſo: In this way, the *pyramidal campanula* ſucceeds.

Azalea likes cool ground, and rather ſhady; muſt be ſheltered as to winds, and in this climate ſhould rather have a dry healthy ſoil, *kept* cool by occaſional watering during ſummer. It is a very beautiful ſhrub.

Candleberry myrtle is ſo called, from the Americans procuring a wax from the berries of this plant to make candles of. It is rather tender, yet likes (as many *American* plants do) a moiſt ſoil; let it be well ſheltered from bleak winds.

Clethra is an elegant ſhrub, flowering all ſummer and even winter; it prefers a moiſt ſoil.

Coronilla is too tender to abide ſevere winters, but in general will do, with a little attention: Its flowers are very pretty, of a bright yellow. There are other ſorts more tender, which muſt be potted for protection from froſts, by houſing them.

Cytiſus, deciduous and evergreen, there is a variety of, and all very ornamental, with their yellow flowers. They are rather too tender for the open ground, and the hardier ſorts here mentioned, if tried abroad, muſt have a dry warm ſituation. *Seedlings* ſhould be houſed, or well protected in frames for the firſt winter, but not kept too cloſe.

Germander tree treat as tender, for though it will live abroad, it is moſtly a green-houſe plant.

Hydrangea conſider as rather tender. and pot ſome: it can hardly be kept too moiſt at the roots.

Mallow tree manage as the *cytiſus*, though it is not quite

quite ſo tender. All *ſeedlings*, that can be brought up in the open air, make much finer plants. The tender ſorts ſhould be put out in nurſery-beds, and *occaſionally* protected by covering, and ſome potted to be *occaſionally* houſed.

Poiſon trees, even the touch of the leaves of theſe plants will affect the ſkin, but the ſap is *very* (even dangerouſly) acrimonious.

Pomegranate muſt have a good ſouth wall, and rich ſoil. The double ſort ſhould be occaſionally mated in *ſevere* froſt. In *very* favourable ſituations (however) they have ſucceeded in *eſpaliers*, dwarf, half, and even full ſtandards. The beſt ſeaſon for planting the pomegranate is in ſpring, when juſt beginning to ſhoot. It is rather rude of growth, and muſt therefore have timely training. The principal pruning ſhould always be in *autumn*, and from time to time all ſtraggling, ſuperfluous growths taken off, that ſhoots may be encouraged to put out ſtrong bloſſoms, in the fullneſs of which the great merit conſiſts. Theſe bearers ſhould be ſix inches, or rather more, aſunder. The mode of flowering is at the ends of the young ſhoots: nothing equals this plant in fineneſs of blow. The double ſort is more commonly planted; but the ſingle flower is very beautiful, and its fruit, which will ripen in ſnug favourable ſituations and ſeaſons, makes a fine ſhow alſo, eſpecially when burſt. Both flowers and fruit are of a very fine ſcarlet.

Roſe claims precedence of other ſhrubs. In its varieties it ſhould be planted in all ſituations; but the *Provence* more particularly. This ſhrub, in moſt (if not all its ſorts) does beſt in a cool ſtrong ſoil.

The *order* of blowing may be reckoned thus: *Cinnamon*, (ſometimes called the *May-roſe*) *monthly damaſk*, *burnet*, *Scotch*, *Penſylvanian*, *apple*, &c. Then the lateſt roſes we have, are thoſe of the *monthly* again, and the *muſk*. Occaſionally every ſort may bear a few *late* ones, but chiefly the *Provence*. To encourage this

ſhrub

ſhrub to *treat* us in the latter part of the year, pulling off the firſt roſes, as ſoon as they begin to decay, is a means; but to pull off all the *buds*, at the uſual time of blow, from a few trees, is a more certain method. A more ſure way ſtill, is to top the new ſhoots towards the end of *May*, or prune down to two or three eyes: Theſe manœuvres ſhould be particularly exerciſed on the *monthly* ſorts. Tranſplanting roſes in ſpring, is a means to effect a middle blow; and if into a *North* border, and cool ground, this may be done late in *April*, or even in *May*, (occaſionally watering) pruning at the ſame time ſhort. *Early* roſes are obtained by being trained againſt a ſouth wall. The *monthly* thus planted, and having glaſs (as the light of a cucumber frame) put before it will ſometimes come as early as the end of *April*, or beginning of *May*. It is a good way to put moſs round the roots of theſe wall trees in *March*, to keep the ground warm, and at the ſame time moiſt, which helps us to both forward and large roſes: In dry and hot ſituations water often.

To *diſpoſe* roſe trees to bear *forward*, the not ſuffering any flowers to blow the preſent year, and pruning ſhort in *July*, or *Auguſt*, is a means from which much may be expected, eſpecially if there is any artificial warmth uſed in the ſpring to force them. With a view to this ſome good bruſhy rooted, low growing plants, may be potted in *autumn*, not ſuffered to bear the next *ſummer*, and being pruned down (as above) will force well the next *ſpring*. Roſe trees potted for an ordinary blow, muſt not be in too ſmall pots, nor placed in a warm ſituation, except early in *ſpring*, and muſt be kept cool by frequent watering.

As to the *propagation* of roſe trees, many will ſend forth *ſuckers* enow, and thoſe that do not, ſhould be *layered*, by ſlitting (as carnations) or budded; but *may* be two years before they root. See page 66. Some will come by *cuttings*, but uncertainly, as the *burgundy* &c. The *China evergreen*, or *everblowing roſe*, takes well

well by cuttings; but ſeldom will do abroad, except in the ſummer months, and therefore is not in this liſt. There are two colours, pale and deep red: It grows low, and rather weak. The *burnet, apple,* or any other ſort producing good ſeed, may be propagated that way; but it is a ſlow way, the ſeed ſeldom coming up till the ſecond year. The *double yellow* roſe blows indifferently, but *when* fair, the flowers are very beautiful. Plant it againſt an eaſt wall, and in dry, but ſtrong ground: I ſuſpect an inſect makes it fail.

Snow-drop tree is conſiderably ornamental. Layers will be two years in rooting. If raiſed from ſeed, (imported) ſow it as ſoon as it arrives, in pots, or boxes, and houſe before froſts come. If they come not up the firſt year, ſet them on a gentle heat the following ſpring, and they will ſoon appear. Shelter the ſeedlings in a frame, or a green-houſe.

Tutſan grows wild in woods, and will therefore do well in the ſhade, as among trees. Every ſhrub, or plant, that *will* flouriſh in ſuch a ſituation is valuable; and a gardener's attention will be well employed to diſcover them, by trials, &c. The *St. John's wort,* and *St. Peter's wort,* (allied to *tutſan*) may be planted in the ſhade.

Willow herb, as its roots run much, ſhould ſome of it be put in large pots; and as it loves moiſture, may be ſet in the ſhade, and kept well watered.

* * * * * *

V.

LIST of *evergreen trees,* ſome of which are conſidered as foreſt, or timber-trees.

* *Arbor vitæ,* common American and Chineſe, *ſ. l. c.*
Andromeda, or Carolina ſorrel tree, *ſ. l. ſu.* July, *m.*
Arbutus, com. and ſcar. fl. ſing. and doub. *ſ. l. c. in.* Nov.
* ——— oriental, broad leaved, *d.*

Bay

Bay tree, common, doub. fl. and ſtriped leaved, *l. f. ſu.* d.
Box tree, broad and narrow leaved, *f. l. ſl. c.* See liſt 6.
* *Cedar* of Libanus, Carolina, and Virginia, *f.*
——— Phœnician, Lycian and Bermudian, *f.*
Cork tree, ſee the article *oak*
* *Cypreſs* large common upright, and male-ſpreading, *f.*
——— Portugal pendulous, or *goa cedar*, *f.*
——— the lower upright, or pyramideal ſhaped, *f.*
* *Fir*, ſpruce, Norway, American ſorts, &c. *f.* See *Pine*.
* —— ſilver, (i. e. the pitch fir) and balm of gilead, *f.*
* —— hemlock, and variegated balm of gilead, *f.*
Holly, ſeveral plain, and many variegated ſorts, *f. l. gr. b.*
—— Dahoon, and Yapon, or S. ſea tea tree, ditto
Juniper, Swediſh, and two Spaniſh ſorts, *f.*
——— ſee *cedar*, Virginian, (i. e. the red) &c.
Laurel, com. cherry bay, and ſtriped ſorts, *l. c. f. ſu.*
——— Portugal, reddiſh wood, bright leaves, ditto
Maple, evergreen cretan, *l. c. ſu.*
* *Magnolia*, or laurel leaved tulip tree, *l. f. c.* Auguſt
* *Oak* (ilex) common evergreen, br. and nar. leaved, *f.*
* — Montpelier, or holly leaved oak, *f.*
* — cork tree, broad and narrow leaved, *f.*
* — Molucca, or the American live oak, *f.*
* — ſcarlet bearing, or the kermes oak, *f.*
* *Pine tree*, wild Scotch pine, commonly called *fir*, *f.*
* ——— pinaſter, ſtone, mountain Siberian, *f.*
* ——— Weymouth, torch, or Virginia ſwamp, *f.*
* ——— Carolina ſwamp, or prickly coned, &c. *f.*
Privet, common evergreen, white flower, *f. ſu. l.* June
* *Pyracantha*, or evergreen thorn, red berry, *f. l. c.* May
Savin, large upright Portugal. See next liſt, *f. l. c.*
Spindle tree, American plain and ſtriped evergr. *f. l. c.*
Strawberry tree, ſee *arbutus* in this liſt.
Yew, ſhort, narrow, broad, and ſtriped leaved, *f.*

** Some of theſe, though they attain, in a courſe of years, conſiderable height, may be occaſionally conſidered as large *ſhrubs*, inſtead of trees, and planted accordingly: Skilful pruning will help to keep large ſhrubs down, and lead others to mount.

OBSER-

OBSERVATIONS ON PARTICULAR TREES.

Andromeda tree ſhould have a dry ſoil, and ſheltered ſituation: protect firſt winter after planting.

Arbor vitæ, though both ſorts are in eſtimation, yet the *Chineſe* is moſt ornamental. Naturally they are of large growth, and hardy, yet ſometimes the *Chineſe* ſort is kept in pots, as an agreeable companion (for ſeveral years) of other exotic evergreens.

Arbutus may be propagated from the firſt young ſhoots of the ſummer, planting them in pots, and putting them in a moderate hot-bed, (rather of *bark*) covering cloſe with a *hand-glaſs* that is air tight; and thus moſt tender ſhoots of woody plants, which are found difficult to ſtrike, may (moſt probably) be made to grow, as the *bay*, *celaſtrus*, *cypreſs*, &c. They may be tried on a warm border, keeping the earth cool, and the glaſſes cloſe. If the cuttings are planted juſt within the glaſs, watering well round the outſide will reach them, and thus they need not be uncovered: If the glaſſes are taken off for watering, it is not (however) material, if they are carefully fixed cloſe again. As ſoon as the cuttings appear clearly to *grow*, air muſt be given them. See next liſt.

Bay, the common plain ſort is rather tender, and requires a ſituation ſheltered from bleak winds; but the variegated and double flowered ſorts are tenderer ſtill; and as they rarely ſucceed well abroad, they are commonly conſidered as green-houſe plants.

Cedar, the Bermudian, is tender whilſt young, and ſhould have a favourable ſituation afterwards.

Fir, there is a variety of each ſpecies, denominated from the number of *leaves*, and the ſhape and colour of the *cones*. The *balm of gilead*, and *hemlock*, ſorts, are the loweſt growers. To get the *ſeed* from the cones, lay them before a good fire, ſo as not to ſcorch them; and if they come not out well, after heating

heating this way, bore a hole up the middle, and drive something of iron in to split them open.

Oak, the evergreen sorts are excellent timber, and very ornamental in pleasure grounds: See page 27. The red excrescences upon the *kermes oak*, are occasioned by *insects* making insertions in the bark for depositing their eggs, which causing an extravasation of sap, it there condenses, and forms the little granulous substances, used for scarlet dying.

Pine, there are several other sorts of less estimation. The *Weymouth* and *torch* pines are the loftiest, and the *Carolina* swamp the lowest growers. To get out the *seed*, observe what is said above, as the *pine* cones are harder to open than the firs.

Pyracantha requires some support of stakes, pales, or wall, though it may be trained as a standard bush, or form an hedge impregnable. It is very pretty when in *full* fruit; but it so often misses being so, through bad pruning, that it is got much out of repute: See page 169. It does best in a dry poor soil, and an eastern aspect. Young *cuttings*, in *June*, will strike, being potted in good earth, and set in the shade till autumn and then plunged in the ground under a warm wall. See observations on the *Arbutus* above.

* * * * * *

VI.

List of low *evergreen trees* and *shrubs*.

3 *Adam's needle* com. and Virginian, pur. and wh. *s. r.*
4 *Alaternus*, large, variety in leaf, pl. and str. *s. l.* Feb.
3 ——— lower growing, ditto
1 *Arbutus*, trailing, or *Uva Ursi. c. fl. l.* Nov.
1 *Andromeda*, box leaved, Canada, *s. su. c.* July *m.*
4 *Box-tree*, white and yel. striped, *c. l.* See last list.
1 ——— dwarf, plain, and striped leaved, *fl. l. c. s.*
4 *Briar.* sw. evergr. doub. red and yel. fl. *su. l. b.* May

1 *Bugloſs* evergreen trailing br. leaved, blue *ſ.* May
2 *Butcher's broom*, common, knee holm, or holly, *ſ. r.*
2 ——————— br. leaved, or Alexandrian laurel, *ſ. r.*
1 ——————— long leaved, or Alexandrian bay, *ſ. r.*
3 ——————— large, or ſhining leav. Alexan. bay, *ſ. r.*
3 *Celaſtrus*, or ſtaff tree (Baſtard Euonymus) *ſ. l.* July
3 *Ciſtus*, poplar leaved, gum, &c. ſeveral, wh. *ſ. c.* May
4 *Clematis*, evergreen, or Spaniſh climber, *c. l. ſ.* Nov.
3 *Cytiſus*, hairy evergr. Spaniſh, yel. fl. *ſ. c.* June, &c. *d.*
2 ——— Auſtrian, large and ſmall flow. yel. ditto
2 *Furze*, com. yel. and white flowered, *ſ.* April
3 —— French, yellow flowered, ditto
4 *Groundſel tree*, ivy leaved, oleander, &c. wh. fl. *ſ. l. c.*
4 *Hare's Ear* or Ethiopian Hartwort, yel. *ſ. c.* July
1 *Heath*, com. Engliſh pur. wh. and yel. flow. *l. r. ſ.* July
1 *Hyſſop*, com. and ſtriped leaved, (ſee p. 251) *ſ. ſl. c.* June
3 *Jeruſalem ſage*, yellow and purple flow. *r. l. c.* June
4 *Ivy*, tall plain, wh. and yel. ſtrip. *c. l. ſ. fl.* Sep. fr. Jan.
2 —— com. dwarf black and yellow berried, ditto
1 *Germander tree*, yel. wh. and purple flow. *ſ. ſl. c.* July, *d.*
1 *Horſe tail*, ſhrubby, the greater and leſs, *ſu. r.* July
4 *Juniper*, common ſhrubby Engliſh, yel. flow. *ſ.* April
4 *Honeyſuckle*, evergreen ſcarlet trumpet, *c. l. ſ.* June
4 *Kalmia*, broad leaved, pale red flow. *ſ. ſu. l.* July
3 ——— narrow leaved, bright red flow. ditto
2 ——— hairy leaved, reddiſh purple flow. ditto
1 ——— glaucous leaved, pink flower, ditto
1 *Lavender cotton*, com. and roſemary, (ſee p. 251) yel. *r. ſ.* Ju.
1 ——————— ſea, com. and ſhrubby Siberian, bl. *r. ſl. c.*
2 ——————— French, (ſtæchas) yel. flow. *r. ſl. c.* June
3 *Lauruſtinus*, com. br. and nar. leaved, *l. ſ. c.* Aug. &c.
3 ——————— hairy, ſhining, and ſtriped leaved, ditto
4 *Moon-trifoil*, (medicago) ſhrubby, yel. flow. May, &c.
4 *Phillyrea*, mock privet, or privet leaved, *ſ. l.* March
——————— ſtriped, box leaved, bay, roſemary, &c. do.
1 *Periwinkle*, trailing and upright, blue fl. *l. c. ſu.* Feb. &c.
1 ——————— doub. fl. and white and yel. ſtriped, ditto
2 *Purſlane tree*, (ſea ſilvery leaves,) com. and Spaniſh, *c.*
2 *Ragwort*, common ſea, hoary leaved, *ſ. c.* June, &c. *d.*
4 *Rhododendron*, large, or laurel leaved, red fl. *ſ. l.* Aug.
3 ——————— dwarf, or the Pontic *roſe bay*, *ſ. l.* Aug.

4 *Roſe*, common muſk evergreen, wh. flow. *l. ſu.* Aug.
4 *Roſemary*, com. plain, and variegated, *c. l. ſl.* June, *d.*
3 *Rue*, broad, narrow and ſtriped leaved, *c. l. ſl.* June
3 —— Aleppo, broad and narrow leaved, ditto, *d.*
3 *Savin*, common plain ſpreading, and variegated, *ſ. l. c.*
4 *Smilax*, or rough bind-weed, wh. fl. red fr. *l. r. ſ.* June
1 *Widow wail*, (cneorum) a trailer, pl. fl. *c. l. ſ.* May, &c.
1 *Wormwood*, ſea, or lavender leaved, and Roman, *ſl. r.*

*** If the *tenderer* ſorts of theſe ſhrubs are judiciouſly planted, they may ſucceed abroad, and are worth the trial, as their place may, at any time, be eaſily ſupplied by ſome ſhrub from the nurſery. While *young*, for a winter or two, in ſevere weather, a few buſhes laid round, and a little peas haulm on the top, would ſave many a curious *exotic*, when they are nearly hardy enough to endure our climate.

OBSERVATIONS ON PARTICULAR SHRUBS.

Adam's needle (yucca) is ſomewhat tender, and ſhould be out of the way of cutting winds.

Andromeda tree is too tender for the open ground in general, but has ſurvived abroad, our ordinary winters, being in a favourable ſituation. It naturally likes a moiſt ſoil: but keep the roots dry in winter.

Ciſtus, all the ſorts are rather tender, but if brought up as hardy from the ſowing as may be, and planted in a dry ſoil, ſhelter and ſun, will ſtand ordinary winters abroad in the ſhrubbery, and prove delightful ornaments: Cuttings do not make ſo fine plants as ſeedlings, but are hardier.

Cityſus, Spaniſh, muſt have a dry warm ſituation.

Germander tree, though generally conſidered as a green-houſe plant, it is aſſerted, by ſome, will endure ordinary winters abroad, with proper management. Riſk of experiment in theſe caſes, or the trouble attending, ſhould not be minded, for if a ſhrub *will* live abroad, it is ſurely much better there; and it has been found

found that ſeveral things will do ſo, which have been uſed to be houſed, even in ſtoves.

Groundſel tree, or ploughman's ſpikenard, muſt have a ſnug ſituation abroad, as hard froſts are apt to cut it; and if it is potted and houſed, it muſt have a great deal of air, as it only needs protection in ſevere weather. This is an argument for *trying* all things abroad, of which there is a chance of doing well, for they cannot have the air they require in a *green-houſe*, where are ſo many plants of a tenderer nature.

Hares-ear is a handſome ſhrub for the *ſouth* front of a plantation;—ſomewhat tender.

Honeyſuckle, evergreen, allow it a ſheltered ſituation, and let it be as much as poſſible in ſight.

Moon-trefoil is a very beautiful evergreen, flowering from *May* to *October*; but as it is tender, muſt have a dry warm ſituation, and then a little attention of cover in ſevere froſts may ſecure it.

Phillyrea in all its varieties, though rather a rambling grower, is conſidered as one of the ſtanding ornaments of our ſhrubberies; yet it has beauty in neither flower, nor fruit, as is the caſe with ſome other plants, (particularly evergreens) being retained only for their foliage. The *ſtriped* ſort ſhould have a ſheltered ſituation, as indeed is, in a meaſure, neceſſary to all *variegated* plants, as their ornamental nature, in this reſpect, is the conſequence of hereditary weakneſs.

Periwinkle is a pretty under ſhrubby evergreen, if properly kept up to the lower part of pales, or a wall, or the larger ſort may be trained to a low ſtake, or even kept as a little buſh. It is very well to confine the roots (being apt to run) by ſlaty ſtones, or tiles: It ſucceeds well in ſhade and moiſture.

Purſlane tree, the Spaniſh is not ſo hardy as the common ſort, but will generally ſurvive our winters, in good ſheltered ſituations.

Ragwort, this ſort (as all the others) uſed to be houſed in winter; but will ſtand abroad in a warm,

ſheltered, dry ſituation, and its hoary leaves are very ornamental, though there is no great beauty in its flowers. When raiſed from ſeed, it is apt to get greener in leaf, and therefore it will be beſt raiſed from cuttings, which ſhould be taken from the whiteſt plants. A likeneſs to original plants is frequently loſt from propagation by *ſeed*, but is aſſuredly maintained from *cuttings* and *layers*.

Roſe, this ſort will need ſupport, being rather trailing; train it to a ſheltered wall.

Roſemary will not do in all ſituations. See page 256.

Savin variegated leaved is beautiful: grows ſlow.

Smilax, as it is trailing, or climbing, is commonly planted to run up the trunks of trees, &c. It may be trained to tall ſtakes, and ſhould be planted in ſight, as in the front of plantations. There are ſeveral ſorts of it, and the bay-leaved Virginian has black fruit.

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VII.

THE FLOWERS in the following *liſt of annuals* are numbered (as the ſhrubs were) agreeable to their moſt uſual heights. The time of flowering is not mentioned, becauſe that will vary, according to the time of ſowing, management, and ſeaſon; very few before, or after *June* and *July*. Many of the ſorts continue longer in flower than a month.

TENDER ANNUALS.

4 *Amaranthus* tree, tricolor, and bicolor
3 ——— globe, purple, red, white, and ſtriped
4 ——— coxcomb, com. large red, ſcar. yel. &c.
2 ——— com. dwarf coxcomb colours, as ditto
3 ——— ſpike flowered coxcombs, a variety
3 *Balſams*, double, red, ſcarlet, and purple ſtriped
3 *Browallia*, ſpreading, and upright, blue flowered
2 *Calceolaria*, or ſlipper-wort, winged leaved

4 *Capſicum*,

4 *Capsicums*, red, yellow and white podded
3 *Cleome*, prickly ſtalked, and five leaved
4 *Colutea*, or ſcarlet African bladder ſena
4 *Convolvulus*, ſcarlet, (ipomæa quamoclit) a climber
3 *Egg plant*, white, yellow, red, and prickly fruited
2 *Humble*, or ſpreading branching *ſenſitive plant*
1 *Ice plant*, or diamond ficoides, wh. and yel. flowered
4 *Indian ſhot*, or flowering reeds ſcar. red, yel.
4 *Pentapetes phœnicia*, ſcarlet flowered
3 *Phyſalis*, or winter cherry, angular and downy
4 *Senſitive*, or Double Memoſa;—ſee *humble plant*.
4 *Sida*, or Indian mallow, heart leaved, pink
2 *Spigelia Anthelmia*, or American Worm Graſs, red
4 *Stramonium*, or thorn apple, double purple, &c.

*** Some perſons cultivate the *ſerpentine cucumber*, or *melon*, as a curioſity of the ſummer, the fruit being produced from one to two yards long, under good management; but it is to be remembered it will take up much room.

As to the *ſpirting* (or wild) *cucumber*, though it may be mentioned here, it is very hardy, ſo as to ſow itſelf in autumn, come up in ſpring, and will abide as a perennial. Sow in *March*, and allow it two yards ſquare. This is merely propagated for *diverſion*; for if the fruit is touched when ripe, it burſts and throws its *fœtid* contents to ſome diſtance, perhaps (wittily) over the clothes of the adventurer, and perfumes him.

OBSERVATIONS ON PARTICULAR FLOWERS.

Amaranthus, the *tree* ſort, grows larger than the others, and bears purple flowers. The *tricolor* and *bicolor* are ſo called, from the former having the *leaves* of three colours; i. e. a bright red, yellow and green; and the latter of two, a deep red and purple; and it is for theſe, and not the flower, that they are cultivated. The flowers of the *globe* ſorts have the peculiar property of retaining their form and colour a long time (years) when gathered. Clear the ſeed of this flower from its

downy covering before ſowing, as a means of forwarding the germination.

Balſam, when double, and well marked, is a very fine flower. The plain coloured red and white, ſemi-double and ſingle ones, are not of much account with the curious, but may be put out in ordinary borders to make a ſhew. The *ſeed* of this flower ſhould be nicely ſaved from the fulleſt bloſſomed, and diſtinctly ſtriped ſorts, that have not grown near ſmall, or ſelf-coloured ones. The plants ſelected for ſeed, ſhould be protected from the wet and cold, after *Mid-Auguſt*, by putting them under lights, or in a green-houſe window, where they may have the full ſun.

Calceolaria, the flower of, is eſteemed only for the curioſity of its ſlipper ſhape. The blow may be continued all ſummer, by planting cuttings.

Capſicums are uſually ranked in the leſs tender claſs, and though they are in nature ſo, yet to have them fine, and to fruit in time, they ſhould be brought forward, by being treated as balſams, &c. at leaſt in ſituations far north of London. They are grown for the beauty and uſe of their *pods*, which are variouſly ſhaped, as long, heart, cherry, &c. See p. 248.

Cleome is a very tender annual, (has been long conſidered as a *ſtove* plant) but may come under the cultivation of the ordinary floriſt, by continuing it longer in a frame, as ſuppoſe to *Mid-July*, or later, if the ſeaſon is then unkind; and then plunging the pots in a warm border. When autumn approaches, a hand-glaſs may be ſet on forked ſticks over this, or any tender plant, and thus preſerve it longer.

Colutea is a perennial ſhrub of ſomewhat tender nature, that hardly ſucceeds abroad. Though the ſeed will come up on cold ground in high ſpring, yet by ſowing it as one of *this* claſs, it may be brought forward enough to produce its beautiful flowers the ſame autumn. See *liſts* IV. and X. In this laſt liſt it is conſidered as a *biennial* as it may be houſed the firſt winter,

winter, and turned out into open ground the following ſummer, and ſuffered to die.

Egg plant muſt have a dry ſoil, and warm ſituation, but yet plenty of water in hot weather. The bloſſom is not ſtriking, but the fruit is often as large as a ſwan's egg, and with common management will be as big as a hen's. This plant requires, however, to be ſown forward and ſhould be brought on by a third hot-bed, if it might be.

Humble plant is one of the *ſenſitives*, the property of which is to cloſe its leaves, or drop them upon being touched. The common ſenſitive plant will grow to eight feet in a *hot-houſe*, (which is its proper place;) but the humble plant is ſpreading, and ſeldom reaches more than a ſtature of two feet; for its lower growth it is therefore more proper for our purpoſe here. It is called *humble* from its receding and dropping ſo completely when touched, foot-ſtalk and all, as if making a bow. The humble plants are diſtinguiſhed from the common upright growing ſenſitives, as the latter only cloſes the leaf, without dropping the ſtalk.

Ice plant trails and ſpreads wide on the ground, makes no ſhew in its flower, but is beautifully covered with chryſtal drops, ſhining like *diamonds* when the ſun is on it; or as the frozen drops of *icicles*. It is not nice in its culture, or weather, though it ſhould not be put out too young. The beſt way is to plant one in a pot of ſix or ſeven inches diameter, without any thing at bottom over the hole; and keeping it in the frame till it gets too big for the pot, plunge it in the ground a little over the rims. Thus the plant will not be *too* luxuriant, but yet ſufficiently nouriſhed, (for it has ſmall roots) and will flower ſooner, and ripen the ſeed better for this treatment.

Indian ſhot muſt be ſown forward, and brought on by different hot-beds to blow the *ſame* year, being rather a tender hot-houſe perennial.

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VIII.

LESS TENDER ANNUALS.

3 *Alkekengi*, or winter cherry, angular and downy
3 *Amaranthus*, trailing, or pendulous flowered, red
3 ——— bloody leaved, with erect flowers, purple
3 ——— upright, reddish purple flowered
3 *Afer China*, doub. wh. red. pur. brown, striped, &c.
2 *Balsam* yellow, *noli me tangere*, or touch me not
2 *Basil*, common sweet red and purple flowered
1 —— dwarf, or bush Basil, a variety in leaf. See p. 247
Capsicums, see the last list, and pages 248
2 *Carthamus*, or common bastard saffron, yellow
2 ——— woolly, or distaff flower, yellow
2 *Cerinthe*, or honeywort, great and small, pur. and yel.
4 *Chrysanthemum*, doub. wh. and yel. plain and quilled
4 *Convolvulus major*, pink, purp. and deep purple
1 *Geranium*, African trailing, variegated flower
4 *Hollyhock*, *Chinese*, single and double variegated
2 *Jacobea*, purple, red, and white flowered
1 *India*, or *Chinese pink*, sing. and doub. striped variously
4 *Indian corn*, dwarf, red, yel. wh. and variegated
Love-apple, or *tomatum*, see page 259
Love lilies bleeding, see *amaranthus trailing*
1 *Mignonette*, see observation, next list
4 *Marigold*, *African*, pale and deep yel. pl. and quilled
3 ——— French, yellow and crimson striped, velvety
2 ——— dwarf sorts of both African and French
4 *Marvel of Peru*, white, yel. red, purp. and variegated
Nasturtium, yel. and orange flow. July, see p. 253
1 *Nolana*, Peruvian dwarf, a trailer, blue flower
4 *Palma Christi*, large and small, a variety in stalk
Persicaria, see next list
2 *Poppy*, Mexican, or prickly poppy, yellow flower
Princes Feather, see *amaranthus upright*
Scabious, sometimes made an annual, see *biennials*
2 *Stock*, com. ten week, red, scarlet, purple and white
1 —— dwarf French fine scarlet, and ditto
2 —— Prussian, or wall-flower leaved, ditto

2 *Sweet*

2 *Sweet ſultan*, yellow, purple, red and white flowered
4 *Tobacco*, common broad and narrow leaved Virginian
3 *Xeranthemum*, or eternal flower, wh. violet and purp.
3 *Zinnia*, yellow few flowered, and red many flowered.

*** The ſeeds of moſt of theſe flowers will come up in cold ground, (if not ſown too early) but are forwarded by a little heat, ſo as to have them much earlier, and a finer blow, producing ſeed, which late plants will not. The ſorts that moſt require a little heat are, *aſter*, *baſil*, *geranium*, *love apple*, *marvel of Peru*, *palma Chriſti*, *yellow ſultan*, and *zinnia*.

The *gourd* may be added to this claſs; but to ſucceed *well*, it ſhould have a good ſouth wall to be trained againſt, and it will take up a good deal of room there. Sorts numerous, as to ſize, ſhape and colour. The common *pumpion* (ſee page 237) is the hardieſt; and the warted *orange gourd* is the prettieſt.

OBSERVATIONS ON PARTICULAR FLOWERS.

Aſter, to come forward and fine, ſhould have a ſecond ſlight hot-bed to prick a few out upon, and indeed this would be a great advantage to any of the other ſorts. Thoſe not thus forwarded, will make a ſecond blow. The *ſtriped* ſorts are much the prettieſt, yet the plain ones make a good ſhew, and do very well for ſhrubberies, &c. particularly the *ſuperb* white and red. It is a good way to plant a few *aſters*, or any flowers deſigned for ſeed, in beds by themſelves, in a way of nurſery, as in the beſt borders it is much neater to have all decaying flowers pulled off regularly, as ſoon as their beauty is over: Pull up all bad flowers (as ſoon as ever they are diſcovered) from amongſt ſuch ſeeding plants, or they will be contaminated.

Balſam, *yellow*, or *touch-me-not*, is more frequently ſown in cold ground, (as others of this liſt, *carthamus*, *cerinthe*, *Mexican poppy*, *princes feather*, and *xeranthemum*) but it is worth while to afford the aſſiſtance of a little heat. This flower is ſufficiently ornamental to

merit a place in the garden; but is chiefly curious for the elaſtic property of its ſeed pods burſting with force, when juſt preſſed between the fingers, throwing the ſeeds to a diſtance.

Chineſe hollyhock ſhould be brought forward (eſpecially northwards) to enſure a timely blow. See p. 280.

Chryſanthemum, to preſerve ſome of the fineſt *doubles*, plant cuttings, or ſlips, the beginning of *September*, in pots, and houſe them before *November*, leſt the froſt come; and they will generally ſurvive the winter, and flower much earlier, though not ſo ſtrong as thoſe ſown in ſpring.

Convolvulus major will need ſupport by a wall, ſtake, or otherwiſe, to be trailed, or run up, as a ſcarlet bean. The deep blue ſort is called *convolvulus nil*, or *anil*. The major convolvulus makes a good ſhew, and may be ſown in *April*, in the places deſigned to flower; but it is the beſt way to ſow three or four ſeeds in a ſmall pot, which being placed on a gentle heat, will be much forwarder and finer, and may be turned out whole (when about three inches high) into open ground; for this flower (as many other annuals) does not tranſplant well: *Nil* will not do without heat to bring it up.

India pink is now brought to blow much more double and variegated than formerly, and it is a very neat, engaging flower, laſting a long time. Prick the plants out when quite ſmall, (for they readily ſtrike) that they may not be drawn up weak, and let them grow in ſingle detached plants, in a dry light ſoil, and they will be ſtrong. If cut down as ſoon as the principal blow is over, they will ſtand another year.

Marigold, the *African*, grows ſtrongly erect. There is a variety in the form of the flower, and the quilled ſorts are moſtly admired. The *French* ſort grows weakly ſpreading, but there are beautiful varieties of it from ſeed, which ſhould be carefully ſaved from the moſt double flowers, having had no ſingl ones growing

near

near them. The ſmell of thoſe commonly ſown is unpleaſant; yet there are ſweet-ſcented ſorts.

Marvel of Peru is conſidered as an annual, yet is naturally perennial in root — as our climate makes it annual. If the *roots* of thoſe growing abroad are taken up in *October*, and dried a few days, they may be packed in dry ſand, and kept in a dry place (from froſt) till ſpring; when potted and placed on a gentle heat, they will ſhoot, and come forward.

Palma Chriſti, the *large* leaved (often a foot broad) will grow from ſeven to ten feet high, according to culture, as early ſown, &c. As it is valued for its noble ſtature, and ample foliage, ſome gardeners bring it forward as a tender annual, in order to produce a *giant*; but it is not adviſeable. The *ſmall* leaved grows to about four feet high, and is an agreeable plant in the leaf, in other reſpects than ſize.

Naſturtium is impatient of froſt; hence it has been conſidered in this claſs, to have it flower early. Late ſown plants, if potted and houſed, will blow in winter, and live round to ſpring. Cuttings of it will grow. The dwarf ſort is preferred by ſome for flower borders, but is not ſo floriferous as the large. There is a *double* kind, ſee page 254.

Stock, ten week, (beautiful and fragrant) is the moſt important annual flower we have. Every one admires it, and its abſence is always felt. It therefore merits every attention, to raiſe fine double flowers, to have them early, a continued ſucceſſion, and as late in the ſeaſon as poſſible.

There ſhould be *four* ſowings of this flower in the year. Let the *firſt* be early in the ſpring, (as *Mid-February*, or beginning of *March*) on a gentle heat: and being ſoon thinned a little, they ſhould be pricked out in about a fortnight upon another moderate hotbed, at four inches aſunder, where they may grow till this diſtance is thought too crowding; but the beſt rule is, to give them their final ſtation as ſoon as they have acquired ſix or eight leaves.

2 *Belvidere*, annual, ſummer, or *mock cypreſs*
2 *Borage*, variegated leaved, purp. and red, ſee page 247
1 *Campion*, dwarf viſcous, or *dwarf lychnis*, purple
1 *Candy-tuft*, common white, red, crimſon, and purple
1 ——— bitter, and ſweet-ſcented white
1 *Caterpillar Plant*, four ſorts, yellow, ſee page 272
2 *Catchfly*, *Lobel's*, red, purple, and white
Cerinthe, or honey-wort, ſee laſt liſt
2 *Clary*, annual pink, purple, and white topped
1 *Convolvulus minor*, blue, white, and ſtriped
4 *Cyanus*, or corn-bottles, blue, red, pur. wh. and ſtrip.
Devil-in-a-buſh, or *Fennel Flower*, ſee *nigella*
1 *Geranium*, annual red muſk, and a ſhowy blue and pur.
1 *Erigeron*, or Canada flea wort, white
2 *Hawkweed*, (baſtard) red, pale, and a deep yellow
3 *Heart's Eaſe*, or panſey, large Dutch, &c. a variety
4 *Indian corn*, dwarf, or *maize*, yellow flow. red fruit
2 *Ketmia*, *bladder*, or flower of an hour, yellow
4 *Larkſpur*, tall, unbranched, branching, and rocket
2 ——— dwarf rocket, as of ditto, a variety
3 ——— Neapolitan, branched and ſpotted
2 *Lathyrus*, joint-podded, blue flowered
3 *Lavatera*, or cretan mallow, red, white, and purple
2 ——— three month's Syrian, pale red flower
1 *Lupine*, ſweet-ſcented, yellow flowered
3 ——— common, two blue ſorts, and a white
4 ——— hairy giant blue, and roſe coloured
——— ſcarlet, ſee *pea*, *Tangier*
Lychnis, dwarf annual, ſee *campion*
4 *Mallow*, curled leaved Syrian, and Chineſe, pink
——— Venetian, ſee *ketmia*
——— Cretan and a Syrian, ſee *lavatera*
3 *Marigold*, giant, or large common double
2 ——— large cape, hybrid, or mongrel
1 ——— dwarf cape, leafy, and naked ſtalked
1 *Mignonette*, (trailing) or ſweet-ſcented reſeda
3 *Mulberry blight*, or ſtrawberry ſpinach, red fruit
1 ——— dwarf plain, and variegated leaved
Naſturtium, ſee obſervation, laſt liſt
2 *Nigella*, blue, white, and yellow, ſingle and double
Normandy tuft; i. e. red *candy tuft*, which ſee
4 *Pea*, ſweet, purple, ſcarlet, white and black

4 *Pea*, pink and white, or the painted lady
4 —— Tangier, ſometimes called *ſcarlet lupine*
2 —— blue flowered, or cultivated lathyrus
4 —— crown, roſe, or cape-horn, pink and white
1 —— winged, or winged podded *lotus*, red flower
4 *Perſicaria*, oriental, red flowered, ſee pages 273, 281
4 *Poppy*, tall, double purple, ſcarlet, carnation, &c.
2 —— dwarf, or corn poppy, double, a variety
2 —— prickly Mexican, or yellow flowered
3 —— chelidonium, or horned ſcarlet poppy
Scabious, ſee next liſt, and the obſervation
1 *Snails*, hedge hogs, and horns, yellow, ſee page 272
2 *Snap-dragon*, annual Sicilian, white flowered
1 *Stock*, dwarf annual, or Virginian red and white
4 *Sun-flower*, large double, pale, and full yellow
3 —— dwarf double ditto
2 *Toad-flax*, or three leaved antirhinum, yel. blue, &c.
1 *Whitlow graſs*, white, and yellow flowered
1 *Venus's looking glaſs*, blue, white, and purple
1 —— navel wort, common, and Portugal, white
Xeranthemum, or eternal flower, ſee laſt liſt

*** There will not need many obſervations on the flowers of this claſs. Directions reſpecting their cultivation will be found in the laſt ſection. It was there ſaid, that *May* was not too late for ſowing thoſe annuals that come quick into flower:—the ſeaſon may be extended (for late blows) to ſome, through *June*, or even the beginning of *July*, as *annual ſtock*, *candy tuft*, *convolvulus minor*, *corn bottles*, *heart's eaſe*, *yellow lupine*, *mignonette*, *ſweet-pea*, and *pheaſant's eye*. But, if dry weather, the ſeeds muſt be watered to bring them up, and the plants alſo to bring them forward.

OBSERVATIONS ON PARTICULAR FLOWERS.

Belvidere is admired for its beautiful regular growth. The autumn ſown ſeed make far the fineſt plants, and as ſelf-ſown ones often come up, they ſhould be preſerved. This flower is adapted for potting, and thus it looks well. See pages 273, 281.

Ketmia,

Ketmia, the flower fades in a very ſhort time, when the ſun is out; but the plant produces a great number, in long ſucceſſion.

Larkſpur is ſeldom permitted to attain its utmoſt perfection, not allowing it room enough. The large ſorts *ſhould* be from a foot to eighteen inches aſunder, and the dwarf half this diſtance. See page 282. Pull up all ſingles. See page 59.

Mignonette is ſomewhat tender, and is often ſown on heat, early in the ſpring, to obtain forward plants, for pricking out into pots, boxes, or baſkets, to be houſed in windows, &c. As it does not tranſplant well, take it up with a little earth about the roots; and, if convenient, put the pots, &c. on a little heat, till rooted. Summer ſown plants, if houſed in winter, become *Biennial*; cut them down firſt.

Mulberry blight, or more properly *blite*; i. e. the herb *blitum*, whoſe fruit reſembles a red unripe *mulberry*. It is alſo called *ſtrawberry ſpinach*, from the leaves being like thoſe of the prickly *ſpinach*, and the fruit like a ſcarlet *ſtrawberry*. The plant muſt be ſupported by a wall, pales, or ſticks, or the weight of the fruit (not eatable) will bring them to the ground. It looks beſt, and is very handſome, when trained, which it ſhould be, juſt as a fruit tree, ſuffering no ſide ſhoots to remain on. The ſeed is near a month coming up, which makes autumn ſown plants valuable, in order to have the fruit forward and fine. Some perſons ſow it in ſpring upon a ſlight hot-bed, and prick the plants out where they are to grow; but to ſow forward, in their proper place (not to be tranſplanted) generally does very well; as it will then decorate the autumn, when other things begin to fail.

Stock, annual, if ſown about *Mid-Auguſt*, for an edging, or in little patches, will make a pretty early ſpring blow, as it is very hardy: A light ſoil ſuits it beſt. This little flower is commonly ſpoiled by being ſuffered to grow thick, which makes it trail, and ramble

ble too much. Four in a patch, about four inches aſunder, is ſufficient.

* * * * * *

X.

List of *biennial flowers.*

2 *Campion, roſe,* red, wh. and ſtr. and doub. crimſ. July
2 ——— Spaniſh viſcous, red flowers, July
2 ——— Portugal, whitiſh green flowered, ditto, July
2 *Canterbury bells,* blue, purple, and white flow. June
2 ——————— variegated, and double flow. June
2 *Carnation,* (or gilliflower) a great variety, ſee obſerv.
2 *Chelone,* forking, penciled, American, purple, Sept.
2 *Clary,* garden, a variety in leaf, pur. ſee page 249, June
Colutea, ſee *ſena, bladder,* below
3 *Goat's Beard,* greater yellow flowered, July
3 *Honeyſuckle, French,* red, wh. and ſtr. flow. June, *d.*
3 *Honeſty,* ſatin-flower, or moon-wort, pur. and wh. May
2 *Lion's tail,* Virginian, or monarda punctata, yel. July.
4 *Mallow, tree,* (proving ſometimes biennial) pur. June, *d.*
2 ——— vervain, ditto, red, and white, June, *d.*
2 *Milk vetch,* fox-tail, (often biennial) yellow, *f.* June, *d.*
4 *Mullein,* branching, phlomoide and ſinuated, yel. June
2 *Penſtroman,* (a biennial-perennial) violet and pl. *f.* Sept.
2 *Poppy,* common, horned podded, yellow flower, July
4 *Primroſe, tree,* com. hairy and ſmooth-ſtem'd, yel. June
2 *Rampion,* (ſee p. 255) a large blue bell flow. June
4 *Rudbeckia,* three lobed Virginian, yel. flow. July, *d.*
3 *Scabious,* pur. black, red, wh. and ſtrip. flow. June
3 ——— hen and chicken flowered, purple, June
3 ——— ſtarry, Spaniſh and Montpelier, purple, July
4 *Sena, bladder,* (colutea) Ethiopian ſcarlet, Auguſt
2 *Snap-dragon,* red, pur. wh. yel. and variegated, June
2 ——————— red, &c. with variegated leaves, June, *d.*
3 *Stock,* Brompton, ſcarlet, bluſh, and white, May
3 ——— queen, red, bluſh, and white, May
3 ——— Twickenham, purple flowered, May
3 ——— ſhrubby, white, tinged and ſpotted, May
4 ——— large red Dutch, and Patagonian, May

2 *Sweet*

2 *Sweet William*, ſingle and double, a variety, June
2 ——————— mule, or ſw. Wil. pink, doub. red, June
2 ——————— broad-leaved ſtrip. and red flow. June
2 *Wall-flower*, large, yel. and bloody, ſing. and double
1 ——————— white, and dw. yel. ſing. and double, May
2 ——————— winter and early ſpring, ſingle yellow

*** Several *biennial flowers*, if ſown early, or brought forward upon a little heat, will blow the ſame year, only later, as *French honeyſuckle*, *honeſty*, *ſcabious*, *ſenna*, and *ſtocks*; but it is not generally deſirable to attempt this, as they do not come ſo fine and ſtrong, when made annuals of. Thoſe juſt named, of courſe, though ſown late the preceding year, will blow the next; but ſome of the biennials, in this caſe, will not blow the next year, as *Canterbury Bells*, a few of which, though ſown at their proper ſeaſon, may ſtand over for the ſecond year.

OBSERVATIONS ON PARTICULAR FLOWERS.

Campion, though a perennial, ſhould be conſidered as biennial, in order to a timely ſupply; it ſometimes is of no longer duration. The *double* (as bearing no ſeed) is propagated by *ſlips* from the roots; and it is a very fine flower. Pot ſome.

Carnation is ſeldom conſidered as a *biennial*, though in fact it is ſo, as much as ſeveral others, uſually denominated of this claſs; for, after the firſt blow, the plants become ſtraggling, and flower weakly; it is, therefore, that they are always *layered*, &c. to continue them. The plain, deep red, or *clove* ſcented carnation, is the original, and an eſtabliſhed cultivated ſort. The reſt are claſſed under the heads, *flakes*, *bizarres*, *picquetees*, and *painted ladies*, according to their colours, ſtripes, ſpots, and pouncings. For *layering*, and *raiſing* carnations, ſee the end of this ſection.

Chelone, the ſeed of this flower is beſt ſown as ſoon as ripe, in autumn; and coming up in the ſpring, they may

may be planted in the borders, in *June* and *July*, and will flower the ſame ſeaſon.

Goat's Beard, the young ſhoots are eat (as thoſe of *ſalſafy*) like aſparagus at ſpring.

Primroſe tree, makes a pretty ſhow, but produces ſo much ſeed, that it becomes rather a troubleſome weed to ſome people. Cut the flower ſtems off, or pull up the plant, before the ſeed pods are ripe enough to ſhed their numerous contents.

Rudbeckia, or American ſun-flower, this biennial ſort is called hardy, but ſhould nevertheleſs have a dry ſheltered ſituation. The narrow leaved dwarf *perennial* (about three feet) ſometimes proves *biennial*, and may be ſown as ſuch, a little every year, by thoſe who would extend their culture of flowers.

Scabious has been noticed in the two laſt liſts as an *annual*, which it becomes, if ſown early; and ſome gardeners make a point of doing it on a little heat to forward them. As a *biennial*, it ſhould not be ſown too ſoon; but if forward plants are tranſplanted in *June*, it will prevent their flowering till next year, when they will come very fine and ſtrong, and this is the way to produce good ſeed.

Sena, *bladder*, or Ethiopian ſcarlet *colutea*, is rather tender, and the ſeedling plants muſt be potted and houſed, or ſheltered by a frame from ſharp froſts. This flower is properly a *perennial*, (ſee liſt IV.) but as it is apt to be cut off in ſevere weather, it is here conſidered as *biennial*, and may take its chance after the firſt flowering. It is ſometimes made an annual of. See *colutea*, liſt VII.

Snap dragon we conſider as biennial, it not blowing ſo handſome afterwards. The variegated (as all ſtripes are) is tenderiſh; this muſt be propagated from *cuttings*, as indeed the plain may be, though the fineſt plants come from ſeed. This flower is of longeſt continuance in a poor ſoil, and will grow and flouriſh out of cracks in old walls.

Stock,

Stock, or ſtock gilliflower, is apt to get too rampant (in ſome ſeaſons) before winter, and when killed by froſt, it is chiefly owing to this circumſtance; for nothing ſtands ſevere weather well, that has grown very freely. Hence it uſed to be the cuſtom of floriſts to tranſplant them ſeveral times in the ſummer; (even at every full *moon*) but to keep them down, and hardy, by this means, tends directly to weaken the blow, if not to kill the plant. The moſt reaſonable method in this buſineſs is, not to ſow *too* early, (or before the firſt week in *April*) to *thin* them, and to *prick* them out in time, that they may not be drawn up long legged; and by no means to let them have a dungy ſoil to grow in, or a very rich one. Prick them out the firſt cool weather after they have ſix leaves, at ſix or eight inches aſunder, where let them remain till *Auguſt*, chooſing a ſhowery time, (rather about the middle) to plant them out where they are to blow; but let not this be into a moiſt ſoil, or damp ſituation: It is a good way to mix half ſand in the mould that lies about the ſtanks above the roots; and when wet and froſt comes, to lay coarſe, or drift ſand, round about them, three or four inches high, which remove at ſpring. Some of the weakeſt plants may remain in the nurſery-bed till ſpring, which put out in cool ground, for in ſuch a ſoil they blow beſt, though they do not ſtand the winter well in it: Stocks blow much finer in a ſhowery ſummer than in an hot one. It will be a great advantage to thoſe moved at ſpring, to have balls of earth to the roots, though they do not well retain it. To diſpoſe them to it, and make them fitter to tranſplant, they may be cut round in autumn, with a long knife, five or ſix inches deep, and about three inches from the ſtem, making one ſlanting cut under the root, at ſix inches depth, to cut thoſe aſunder that ſtrike directly down. This is a practice that would anſwer in moſt things that are to be removed at ſpring; and if not, it would generally be of ſervice, as the cutting

ting off the end of a downright root, occaſions it to throw out ſeveral others of a more fibrous nature.

Sweet William (or bearded pink) is diſtinguiſhed into broad and narrow leaved ſorts. This flower comes very diverſified from ſeed, ſome plain, others beautifully ſtriped, and a *few* double, perhaps one in thirty or forty. But the ſingle ones are generally ſo ornamental, that the want of doubles is not much lamented. The *double* ſorts are propagated from *layers*, as carnations. The *ſweet William* is perennial, but as the plants ceaſe to be handſome (and in ſome caſes die) after the firſt blow, it is neceſſary to raiſe ſome every year for ordinary uſe.

Wall-flowers, raiſed from ſeed, produce ſome doubles; but the chance is not great for fine ones, which are to be continued from ſlips or cuttings in *May*, *June*, or *July*, plant them in a rich ſoil, and ſhade till rooted. The double *white* wall-flower is tender, and ſhould be potted for houſing, as indeed other good ſorts of this flower ſhould be, and generally are.

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XI.

LIST of *fibrous rooted perennial flowers.*

2 *Adonis*, or perennial pheaſant's eye, yel. *r. f.* Aug. *m.*
3 *Acanthus*, ſmooth and prickly wh. and pink, *f. r.* July, *d.*
3 *Agrimony*, the large, or odoriferous yellow, *f. r.* July
3 ——— hemp, common wild, red, *f. r.* Auguſt, *m.*
2 ——— ſpotted ſtalked American, purple, ditto
3 ——— lower Pennſylvanian and Virginian, wh. ditto
4 ——— Canada, or tall purple flower, ditto
4 ——— talleſt Pennſylvanian, white flowered, ditto
1 *Abſinth*, rock, Cretan, and prickly, yel. and wh. *f. r.* May
1 *Anthemis*, or ſea camomile, a trailer, white, *f.* July
3 ——— ox eye ſort, yellow, white and red, *r.* June
1 *Anthyllis*, double, pur. and ſcar. trailing, *f. r.* June

4 *Arum*

4 *Arum*. dragon, common ſpotted ſtalked purple, *r.* June
1 *Aſarabacca*, Virginian vein leaved, &c. purp. *r.* May
Aſphodel, or king's ſpear. See the next liſt.
After, a variety, ſee *ſtarwort* below.
1 *Auricula*, or bear's ear, ſee *obſervation* end of liſt.
1 *Avens*, com. alp. yel. and marſh, pur. &c. *f. r.* May, *m.*
3 *Bachelor's button*, ſing. and doub. red and wh. *f. r.* May
——— blue, ſee *cyanus*
1 *Balm*, grandiflorus, purple, red and white, *r.* June
1 *Barrenwort*, alpine (epimedium) red, *r.* May, *ſhade*
Bear's breech, ſee *acanthus*
1 *Bear's ear ſanicle*, of Matthiolus, fine red, *r.* June, *d.*
1 *Bear's foot*, or hellebore, greeniſh flower, *f. r.* Feb.
2 *Betony*, com. Daniſh, oriental, pur. red, wh. *f. r.* July, *m.*
4 *Bee larkſpur*, common and great flow. blue, *f. r.* July
2 *Bloodwort*, or bloody ſtalked dock, white, *f.* May.
2 *Borage*, oriental perennial, blue flower, *f. r.* May, *d.*
1 *Bugle*, com. pyramidal blue, red and wh. *r.* May, *m.*
2 *Bugloſs*, com. (ſee p. 253) blue, wh. and red, *f.* June
1 ——— oriental trailing, and Virginian, yel. *f.* May, *d.*
2 *Burnet*, com. (253) and agrimony leav. red, *f. r.* June
4 *Bryony*, common white flowered, red berried, *f.* May
2 *Cacalia*, alpine purple, a variety in leaf, *f. r.* June
Calamint, Hetrurian, ſee *balm* grandiflorus.
4 *Campanula*, pyramidal, or ſteeple flow. blue, *f. ſ.* Aug.
1 ——— grandiflora, and Carpathian, purp. *f. r.* July
——— ſee *Throatwort*. *Campion*, ſee laſt liſt.
1 *Candy Tuft*, round leaved perennial, wh. *r. c.* June
3 *Cardinal flower*, ſcarlet, blue and violet, *f. r. c.* Aug. *d.*
Carnation, is properly a *biennial*. See the laſt liſt.
2 *Catchfly*, or viſcous campion, doub. red and wh. *r.* June
4 *Centaury*, great pur. and woad leaved yel. *f. r.* June
2 *Chelone*, Virginian, &c. wh. blue, red and pur. *r.* Sep.
4 *Chervil*, perennial, or *ſweet fern*, white, *f.* June
1 *Chriſtmas roſe*, or black hellebore, white, *r.* January
4 *Clary*, Indian blue, and glutinous yellow, *f. r.* June
3 *Columbine*, com. plain, ſtriped and ſpotted, *f. r.* June
3 ——— feathered, (thalictrum) wh. and pur. ditto
2 ——— mountain, or alpine, large blue, *f. r.* May
1 ——— Canada dwarf early, red with yel. *f. r.* Ap.
Cookoo flower, or *meadow pink*, ſee *ragged robin*

4 *Coreopsis*, verticillate, yellow, a long blow, *r.* July
1 *Cowslip*, double yellow, and double scarlet, *r.* May
1 ——— American, or *Meadia*, purple, *f. offs.* May
2 *Crowfoot*, meadow, double yellow flowered, *r.* May
1 ——— mountain, double white flowered, *r.* May
2 *Cyanus*, mountain, or perennial blue bottle, *f. r.* June
1 *Daisy*, wh. red, scar. variegated, coxcomb, &c. *r.* April
1 —— globe, (globularia) a fine blue flower, *r.* June
3 —— ox eye, American and Montpelier, wh. *f. r.* July
—— Michaelmas, see *starwort* tradescants
2 *Dodartia*, oriental, deep purple flower, *r.* May
Dodecatheon, see cowslip American
2 *Dog's bane*, willow leaved, purp. and wh. &c. *r.* July
——— (Asclepias) Virginia *orange offs.* July
3 *Dragon's head*, Virginia purple flowered, *f. r.* August
2 ——— hyssop leaved, blue flowered, *f.* June
3 *Eryngo*, or sea holly, Amethystine, and Russian, *f.* July
2 ——— maritime English, and aquatic American, ditto
2 *Eternal flower*, pearly, or white everlasting, *r.* June
3 *Feverfew*, two doub. fl. and a curled leav. wh. *f. r. c.* June
4 *Figwort*, Spanish, elder leaved, red and gr. *f. r. fl. c.* July
4 ——— aquatic variegated leaved, ditto
4 *Flax*, perennial Siberian blue flowered, *f.* June
3 *Fox-glove*, pur. red, wh. and iron coloured, *f. r.* June
2 ——— great and less yel. and Spanish purp. ditto
——— American, see *monkey flower*
3 *Fraxinella*, white and purple flowered, *f. r.* June
3 *French honeysuckle*, Canadian, red, wh. pur. *f.* June, *d.*
3 ——— —— sensitive, branched, yellow, ditto
1 *Fumatory*, diffused, branching, yel. and wh. *f.* June
2 ——— upright American, purple, ditto
3 *Gentian*, great yellow, and purple flowering, *f.* July
1 ——— asclepias leav. and cross-wort, blue, *f. r.* May
1 *Gentianella*, fine azure blue flower, *f. r.* May
1 *Geranium*, (*English*) blue, pur. red, black, *r.* May
——— *African*, or tender sorts, see *observation*
2 *Globe flower*, European, and Asiatic, yel. *f. r.* May, *m.*
4 *Globe thistle*, great blue and white flowered, *f.* June
2 ——— less, deep blue, and white flowered ditto
3 *Golden Rod*, common Mexican and American, *r.* August
——— tall late blowing American, *r.* September

Golden Rod, New York, fleſhy leaved, evergr. *r.* Oct.
———— loweſt, or dwarf Pyrenean, *r.* Auguſt
2 *Goldy locks*, German, a bright yellow flower, *r. c.* July
1 *Hawkweed*, (or grim-the-collier) orange col. *f. r.* July
1 ———— great yel. or French goat's beard, *f.* June
Hedge Muſtard, ſingle and double, ſee *rocket* yellow
4 *Hellebore*, (veratrum) wh. black, and yellow, *f. r.* May
2 *Helonias*, two ſorts, wh. and cream col. *f. off.* July
1 *Hepatica*, red, blue, wh. and ſtr. ſing. and doub. *r.* Mar.
1 *Heart's eaſe*, or tricolor violet, yel. pur. wh. *r.* April
Herb bennet (geum) ſee *avens*
4 *Herb Chriſtopher*, com. and long ſpiked, white, *f.* June
4 *Hollyhock*, com. doub. wh. yel. pink, red, ſca. &c. *f.* Aug.
———— fig-leaved, or palmated, a variety, ditto
———— Chineſe, or painted lady, ſee liſt VIII.
1 *Ladies mantle*, com. fringed, Alpine, &c. *r. f.* May
1 *Ladies ſmock*, double pur. and double wh. *r.* May, *m.*
1 *Ladies ſlippers*, yellows, purples, red, &c. *f. r.* May, *m.*
1 *Ladies finger*, (Anthyllis) ſcar. doub. fl. *f.* June
1 *Lavender-ſea*, great, &c. wh. and blues, *r. ſl. c.* July
1 *Lily of the valley*, wh. red, ſtr. ſing. and doub. *r.* May, *m.*
2 *Lion's foot*, ſing. and doub. blue flowered, *f. r.* June, *d.*
2 *Lion's tail*, ſcar. and pur. fl. pl. and ſtr. leaf, *r. ſl. c.* July
1 *London pride*, or none-ſo-pretty, ſpotted flow. *r.* May
3 *Looſeſtrife*, common great yellow flowered, *r.* June.
3 ———— willow-leaved, white Spaniſh, ditto
2 ———— ciliated Canadian yellow, ditto
1 ———— money-wort, or herb two-pence, yel. ditto
———— ſee *willow herb*, liſt IV.
2 *Lupine*, perennial Virginian blue flowered, *f.* June
1 *Lungwort*, common, blue, purple, and red, *r. f.* May
2 ———— Virginian, blue, red, pur. and wh. fl. *r f.* May
3 *Lychnis*, ſing. and doub. ſcar. pink, and wh. *f. r. c.* July
3 ———— Chineſe, fine orange-coloured flow. ditto, *d.*
2 *Lychnidea*, red, pur. blue and wh. ſw. ſcented, *r. c.* July
Madwort, ſee *Alyſſon*
2 *Mallow* Virginia, ſmooth and rough leaved, wh. *f. r.* June
1 *Marſh Marigold*, double flowered yellow, *r.* April, *m.*
2 *Maſter-wort* great black rooted, yellow, *r.* June
4 *Meadow rue*, common and Montpelier, yel. *r. f.* June, *m.*
Michaelmas daiſy, is *ſtarwort tradeſcants*, which ſee
Milkwort,

1 *Milkwort*, com. and bitter, blue, red, wh. &c. *f.* June, *d.*
3 *Milk vetch*, goat's rue-leaved, and oriental, yel. *f.* July
1 ——— (Anthyllis Montana) purple, trailing, *f.* July
2 *Monkey flower*, or American fox glove, blue, *r. f.* July
3 *Morina*, pur. wh. pale and deep red, *f. off.* June
3 *Mugwort*, filv. ſtr. and gold ſtr. pur. *r.* June
4 *Mullein*, yellow, purple and iron coloured, *r. f.* June
1 ——— myconic borage leaved, trailing, blue, ditto
1 *Navelwort*, perennial trailing, blue flowered, *r. c.* April
Orchis, biennial, ſee next liſt
Orobus, ſee *vetch*, bitter
2 *Orpine*, the greater, purple and white, *fl. c.* July, *d.*
1 ——— the leſſer, (anacampſeros) a trailer, pur. ditto
1 ——— true, (telephium) white flowered, *f. r. fl. c.* July
4 *Ox-eye-daiſy*, American and Montpelier, white, *r.* July
2 ——— corymbus flowering, white, ditto
Paſque flower, ſee next liſt.
4 *Paſſion flower*, com. palmated blue rayed, *c. l. f. ſu.* July
4 *Pea*, everlaſting, red, ſcar. pur. and large fl. *f. r.* June
Pæony, being tuberous rooted, ſee next liſt
1 *Pink*, common, red, white, plain and fringed, damaſk
1 —— red cob, white cob, painted lady
1 —— maiden, or matted, and grey leaved mountain
1 —— pheaſant's eye, &c. a great variety
3 *Plumbago*, or European leadwort, blue, pur. wh. *r.* Oct.
1 *Polyanthus*, a great variety in flower, *f. r.* April
2 *Poppy*, oriental ſcarlet, and Welſh yellow, *f. r.* June
1 *Primroſe*, white, red, ſcarlet, doub. yel. &c. *r.* March
3 ——— tree, the larger, (perennial) yel. *f. r.* June
2 *Ragged robin*, or meadow pink, double red, *f. r.* May
4 *Reed*, Portugal, or Spaniſh, variegated leaved, *off.*
2 *Reſt harrow*, common purple, with red flowers, *f.* May
3 *Rhubarb*, com. and weaved leaved Chineſe wh. *f.* June
4 ——— palmated Chineſe, and large Tartarian, &c.
2 *Rocket*, ſing. and doub. wh. pur. and red, *f. c. r.* June
2 ——— double yellow, or double eryſimum, *r.* June
4 *Rudbeckia*, jagged leaved Virginian orange, *r. f.* July
2 ——— dwarf hairy, yellow, purple, &c. ditto
1 *Ruſh*, ſweet flowering, pink, wh. and pur. *r.* July *w.*
1 *Sanguinarea*, Canada, (puccoon) ſing. and doub. wh. *r.*
2 *Sarracena*, or ſide-ſaddle flower, pur. and yel. *f. r.* July

4 *Saw-wort*, New York and Maryland, pur. flow. *r.* June
3 *Saxifrage*, pyramidal, often called *ſedum*, ſee next liſt
2 ——— ſpotted hairy, and ſtrawberry, wh. ditto
1 ——— ladies cuſhion, a low trailer, wh. *off.* May
1 ——— golden, two ſorts as to leaf, yellow, *r.* July
——— double flowered, granulated, ſee next liſt
4 *Scabious*, perennial Alpine, blue flowered, *ſl. c. r.* July
2 ——— oriental, ſilvery, and graſs leaved, *ſ.* July.
3 *Scullcap*, talleſt, or nettle-leaved, purple, *ſ.* June, *d.*
2 ——— Alpine, violet, and white flowered, ditto
2 ——— eaſtern, germander leaved yellow, ditto
Sea pink, ſee *lavender* and *thrift*. *Sea Cale*, ſee p. 241.
3 *Sena*, wild, or Marilandic, (caſſia) *r. ſ.* July *d.*
1 *Siſyrinchium*, Virginian and Bermudian, blue, *r. ſ.* June
——— ſee *iris*, next liſt
2 *Sneezewort*, double flowered white, *r. ſ.* July, *m.*
1 ——— hoary yel. and ſilvery leaved wh. *r. ſ.* July
3 *Soapwort*, double flowered, purple, and ſcarlet, *r.* July
1 *Soldanella*, purp. blue, wh. and fringed, *r.* March, *m.*
3 *Soloman's ſeal*, many flow. ſw. ſcented, &c. *r.* May, *m.*
3 *Sophora*, oriental, fox-tail-like, blue, *r. ſ.* July
4 ——— four-winged-podded, yellow, *r.* June
1 ——— tinctorious Virginian, trailing, yel. *r. ſ.* July
Speedwell, ſee *veronica*
Spider-wort, ſee next liſt
1 *Starwort*, dwarf alpine, purple flowered, *r. c.* June
1 ——— dumoſus, buſhy white flowered, *r. c.* Aug.
2 ——— ſea, or tripolium after, blue, *r. c.* July
3 ——— flax leaved blue flowered, *r. c.* Auguſt
4 ——— New England, violet coloured, *r. c.* Sept.
4 ——— tradeſcants, a pale blue flower, *r. c.* October
3 ——— Cateſby's pyramidal Virginian, blue, *r. c.* Nov.
2 ——— Italian, large bright blue flower, *r. c.* Nov.
1 *Stock*, dwarf ſhrubby, or window flow. red, *ſ.* June
1 *Stone crop*, ſmall and great, trailing, yellow, *c. r.* July
1 ——— poplar leaved, upright, pinkiſh, ditto
4 *Sunflower*, many flowered, com. double, &c. *r.* July
3 *Swallow-wort*, common wh. black and yellow, *ſ. r.* June
1 *Thrift*, greater and ſmaller, red, ſcar. and wh. *ſl. r.* June
3 *Throat-wort*, great, double wh. blue and pur. *r.* June
4 ——— giant, blue, white, red and ſtriped, ditto

2 *Throat-wort*, dwarf, ſmall fine blue flower, *ſ.* June
2 *Toad flax*, a variety yel. pur. and wh. *fl. c. r.* July
1 ——— dwarf Alpine purple flowered, ditto
3 *Valerian*, common red and wh. mountain red, *ſ. r.* June
2 ——— Greek, pur. wh. and variegated, *ſ. r.* May
4 *Veronica*, a variety, blue, white, and bluſh, *r. ſ.* June
1 ——— dwarf blue and wh. and Welſh blue, ditto
3 *Vervain*, common, and ſpear leaved, blue, *ſ. r.* June
4 *Vetch*, white wood, tufted blue, *ſ. r.* July
3 —— bitter, (orobus) a variety, blue and pur. *ſ. r.* May
2 —— Siberian, unbranching orobus, yel. *ſ. r.* April
—— ſee *orobus*, next liſt.
1 *Violet*, com. blue, pur. and wh. ſing. and doub. *r.* March
1 ——- Auſtrian purple, and Ceniſſian blue, *r.* April
1 ——— Alpine, double red, and purple, *r.* March
1 ——— yellow, and grandiflorus yellow, &c. *r.* April
Wake robin, ſee *arum*
Willow herb, ſee *looſeſtrife*
1 *Wood ſorrel*, common white and purple, *ſ.* June, *m.*
1 *Worm Graſs*, Maryland, (ſpigelia) red flower, *r.* July
2 *Yarrow*, or *milfoil*, the purple flowered, Auguſt
——— ſee *maudlin* and *ſneezewort*

OBSERVATIONS ON PARTICULAR FLOWERS.

Acanthus, or *bear's breech*, is admired for the elegance of its leaf. It ſpreads wide, and ſhould have room allowed it, in a warm light ſoil, and ſheltered ſituation; but ſtill rather a ſhady, than a ſunny one.

Alyſſum do beſt in a dry hungry ſoil, but ſhould have a favourable ſituation, where they will blow long and prettily.

Avens will grow in any cold moiſt ſhady ground.

Auricula, from the great and elegant variety of its flower and leaf, ariſing perpetually from ſeed, is one of the *floriſt's* chief delights, and to which he pays much attention in the culture. It is one of the firſt flowers, and ranks in nature with the *primroſe* and *polyanthus*. The ſorts admitted in the preſent collec-

tions, are about four hundred. The *auricula*, the *carnation*, *tulip*, *hyacinth*, *ranunculus*, *anemone*, &c. are called *fancy flowers*. For the *propagation* and *culture* of the *auricula*, ſee the end of this ſection.

Bear's ear ſanicle is very hardy, yet being low, is a proper plant to *pot*. It may be planted in any cold place, and ſhould have a dry lean ſoil, but be duly watered in ſummer; and moſt things that a poor ſoil ſuits, muſt ſtill have water freely in warm weather. This ſanicle is about ſix inches high; that of *Gmelin* only four.

Betony, as a native of the woods, is proper to plant in ſhrubberies, and ſhady places.

Birth-wort is tender, and ſeedlings of it muſt be ſheltered by a frame in winter.

Bryony is a climber, and is proper to grow in plantations to run up trees, &c.

Campanula pyramidal, may be propagated (as well as from ſeeds and ſlips) by pieces of its *root*, planted about an inch and half in the ground, in a ſhady, but not moiſt border. The fineſt plants are produced from *ſeed*; but will be three or four years before they blow. Sow a few every year in *April*, in a light freſh ſoil, where the morning ſun only comes. As much wet in the cold ſeaſons is apt to rot this root, it will be proper to guard againſt it, by ſome occaſional covering, when there is a continuance of rain, or ſnow. A few *potted* may be removed under ſhelter. A *mat* ſet *high* over is a proper covering for a bed of them. In the *ſummer* they muſt never want water, eſpecially when ſpindling, or in blow. There is a *white* ſort.

Cardinal flower muſt have a dry ſoil, and a warm ſituation; occaſionally alſo a little protection. They are commonly potted, and ſome ſhould at leaſt be ſo, leſt thoſe in the open ground be cut off: This flower is very ornamental, but the ſcarlet moſt ſo.

Chriſtmas roſe is very hardy, but a dry warm ſituation may be allotted it; and when in flower, a little protection

protection to preserve the flowers in beauty, as a *hand-glass* may be advisable. A plant or two potted (large pots as it spreads) is agreeable enough, at such a season, to house when in blow.

Columbine comes in great variety, and the seed should be well chos n, which, when sown in spring, is rather apt to miss. Autumn is therefore preferable; and these plants will from this sowing be much stronger. The plants should not stand above two years after flowering, as afterwards they get unsightly, and plain.

Cowslip American is commonly potted, as indeed some plants should be, as it thus appears to advantage; but it is hardy, and grows best in borders that are somewhat shady, not having the afternoon sun.

Dragon's head should have a moist shady situation.

Figwort, the plants are somewhat tender, and may be only expected to stand through ordinary winters, in a warm soil and situation. Let some be *potted*, for housing, lest those abroad be cut off.

Fox-gloves do best in a somewhat strong soil, and shady situation, and will be found a useful flower in shrubberies, &c. in all its varieties.

Geranium, (or *crane's bill*, so called from the shape of the seed vessel) the *exotic* sorts are tender, *Africa* being their native climate. As favourite flowers, the different sorts are cultivated by all descriptions of people, as opportunity affords to preserve them in winter. They are properly *green-house* plants. The principal kinds are as follow, classed according to their ordinary height of growth:

1. Flaming, or Vervain mallow leaved, scarlet.—Three coloured; i. e. red, black, and white.—Ladies mantle leaved, whitish and bluish.—Sweet-scented mallow-leaved, white.—Gooseberry-leaved, reddish.—Caraway leaved, or variable geranium, red, crimson, purple, white, &c.—Vine leaved, red and white.—Night-smelling, yellowish with dark spots, three sorts.—Pinnated, or proliferous, of different colours.

2. Spear-leaved, white.—Fleſhy ſtalked, or celandine leaved, white.—Square ſtalked, fleſh coloured.

3. Birch-leaved, reddiſh.—Sorrel leaved, bluſh, plain and ſtriped flowered, and variegated leaved.—Three gouty ſtalked, or columbine leaved, purple—Roſe-ſcented, a purpliſh blue.—Glutinous vine leaved, reddiſh purple and white.—Horſe-ſhoe, green leaved, variegated, ſilver edged, ſilver ſtriped, gold ſtriped, pink, two ſcarlets and a purple, and one large ſcarlet or grandiflorum.

4. Vine-leaved, balm-ſcented, blue.—Shining, and mallow leaved, ſcarlet and deep ſcarlet.—Butterfly, or variegated flowered, with a pointed mallow leaf.—Marſh-mallow, or hood-leaved, purpliſh; and a variety of this with angular leaves.—Raſp leaved, fleſh colour, ſpotted red.—Two coloured, purple and white. See the end of this ſection.

Gentianella likes a cool loamy ſoil, and eaſtern ſituation, and ſhould not be often removed, or planted in too ſmall pieces when it is.

Globe flower, or *globe ranunculus*, is very ornamental. The *European* is ſometimes called *locker gowlans*. They both do well in a cool ſoil, and *north* border; though the name *Aſiatic* ſeems to direct to a dry ſoil, and warm ſituation. The caſe is, they are natives of moiſt, ſhady places; and whenever this is the caſe, we may conclude ſuch plants are organized accordingly, and that they muſt be accommodated by us agreeable to their nature. The *conſtitution* of plants is neceſſary to be known, in order to their proper culture; and a *gardener* cannot direct his attention more to his credit, than to make *obſervations* and *experiments* to diſcover it.

Golden rod will grow in ſhade, and particularly the evergreen ſort; but being late blowers, this circumſtance directs to a ſnug ſheltered ſituation.

Hellebore, the white flowered, is the common officinal plant. A light ſoil and dry ſituation, not ſubject to ſnails, ſuits it beſt.

Helonias

Helonias is a very elegant and ornamental plant worthy of the moſt conſpicuous part of the pleaſure garden. It requires only the ordinary culture of perennials. *Seeds* are imported from *America*, as the climate does not ripen them here.

Hepatica is found to tranſplant beſt when in flower; but it ſhould never be in ſmall portions, leſt it wither away; they never look well in ſmall patches, as is the caſe with all dwarf blowers. Situation and ſoil the ſame as *gentianella*.

Ladies ſmock, and *ladies ſlipper*, do beſt in a moiſt ſoil and ſhade, as in a *north* border, where not many other things do well.

Lily of the valley ſhould have a cool ſituation, and if not in a moiſt ſoil, give it at leaſt an *eaſt* border, or where it has only a little morning ſun.

Lion's foot is ſomewhat tender, and to do well muſt have a favourable place in the garden, as to ſun and ſhelter; it does beſt in a light, or ſandy ſoil. Let ſome be potted, it is pretty, and blows all ſummer.

London pride (a ſaxifrage) uſed to be planted much as an edging; but it does not anſwer this purpoſe well. A few plants here and there in patches is beſt; by no means allow it a good border: It prefers a moiſt ſoil and cold ſituation.

Looſeſtrife, the common, is found wild; but it is a ſhowy plant, and where a variety is wanted is very admiſſable. It grows in ſhady moiſt places, and ſhould be planted accordingly, in the borders of a ſhrubbery, &c. The ſmalleſt ſort is a trailer.

Lupine will be beſt raiſed from ſeed, without tranſplanting, as the roots ſtrike down deep: If they are tranſplanted, let it therefore be quite young.

Lungworts prefer a ſhady ſituation; but the *Virginian* (an elegant little plant) rather one that is dry and ſheltered.

Lychnis, the double ſcarlet is a beautiful flower, but not apt to encreaſe much at root; recourſe is therefore

to be had to *cuttings*, which alſo are not certain in ſtriking root. In *June*, or *July*, take cuttings from the ſide ſhoots, (without flower) and let the pieces planted have three, or at the moſt four eyes. Put them into a good ſoil, fine and rich, but not dungy, as deep as half way between the ſecond and third joint, in an *eaſt* border: and keep them cool, but not wet. A *hand-glaſs* will greatly aſſiſt in this buſineſs, as in all other like caſes. See *pink* at the end of this ſection. The *Chineſe lychnis* is rather too tender for open culture; but in a choice ſituation may abide moderate winters. It makes a good potted plant among myrtles and geraniums.

Lychnidea, take the cuttings off cloſe to the ground, and diſcharge the tops; and plant them in pots, or borders, in a place not of much ſun.

Maſter-wort (a medicinal plant) is of no great ornament; but is commonly cultivated for borders of ſhrubberies, &c. as being of low growth, and hardy nature. There is an *alpine* ſort about a foot high.

Marſh marigold is a plant (as its name imports) that will flouriſh in a wet ſoil; but yet it does not do much amiſs in a dry one. In default of a moiſt ſoil, any plant that requires one, ſhould at leaſt be accommodated with a ſhady ſituation, and never want water in ſummer.

Milk vetch is ſomewhat tender, particularly the ſeedlings, which ſhould be protected by a garden frame in winter. *Fox tail* ſort, ſee *biennials*.

Monkey flower is very ornamental, and of eaſy culture, not difficult in ſituation.

Monk's hood is a poiſonous plant in every part, but very ornamental, and commonly cultivated. Shade ſuits it, and it will even grow under trees, or in any damp place, where few other things will.

Morina is worthy of a conſpicuous place in the garden. It has a ſtrong tap-root, and ſhould be tranſplanted whilſt young, that it may not be damaged; but

but ſowing in the place where it is to grow (as directed for the *lupine*) is the beſt way.

Mulleins prefer a light ſoil, but like a north border; and the borage leaved being very low, is proper for an edging in a cool ſhady ſituation.

Orpine, this, as all ſucculent plants, ſhould have a dry ſoil and ſituation, and not often watered.

Paſſion flower ſhould be planted againſt a warm wall, where it may have room to ſpread, as it is a *very* free ſhooter. The ſorts are numerous, (for *green-houſe* and *ſtove*) but only this well ſuits open culture. In fine ſituations, and the *ſouthern* parts of *England*, there are two more, however, that may do abroad. Prune it about *Michaelmas*, leaving the ſhoots from two to four feet long, as the ſtrength of the plants, or room, dictates, and a foot aſunder. Before the froſts come, cover the roots, a yard round, with dry litter; and renew it with dry, when afterwards it gets much and long wet. The branches alſo ſhould be covered with a mat (a thin one, and not over cloſe) before *ſevere* froſt ſets in; but uncover as ſoon in ſpring as may be; or, in ſhort, in mild weather, on *days* through the winter, if not too much trouble. This flower has been ſometimes trained to a ſtake, in which caſe, ſhorter pruning muſt take place to keep it down. It bears upon the young ſhoots, which ſhould be regularly trained in. The flowers are the glory only of a day, but generally a great number are produced in ſucceſſion. It takes readily from cuttings, of about ſeven or eight inches long, cut in *March* or *April*, and planted in a good ſoil, kept cool by water, and ſhaded from much ſun.

Pink, the ſorts are numerous, for *ſeed* is conſtantly producing new varieties, occaſionally *one* among many that vies with its famed predeceſſors in beauty, and whoſe ſuperior excellence is not neglected by the *floriſt*. He gives it a name as fancy directs, and it is enrolled in the *nurſeryman's* catalogue of worthies. The *pink* (as the *carnation* was) might be conſidered biennially, the good ſorts being regularly layered, &c. every year

for increaſe: They do, however, ſtand on for older plants, better than carnations. For *propagation*, &c. ſee the end of this ſection. There is a pink called the *ever-blooming*.

Polyanthus produces an infinity of ſorts from ſeed, and the *floriſt* purſues his object of obtaining *prize* flowers of this kind. The polyanthus delights in a loamy ſoil, and ſhady ſituation. It is an excellent edging flower for ſhrubberies; though fine blows are not to be expected under trees, or in much wet. An *eaſt* border is the place for producing the beſt flowers. For *raiſing* them, &c. ſee the end of this ſection.

Plumbago, though it be a native of *Italy*, is hardy enough to abide our ordinary winters in the open ground. Afford it a dry, ſunny, ſheltered ſituation, which will be a means of preſerving it, and alſo tend to forward the blow, as it is ſo late: All plants that produce their flowers towards the end of autumn, (however hardy) ſhould have a favourable aſpect, as to ſun, leſt winter overtake them before they can gratify us with their ſhow.

Poppy, allow the *eaſtern* ſort a light dry ſoil.

Reed, Portugal, is curious for its lofty and ample growth, but rarely flowers with us. It attains to ten or twelve feet high, and its ſtems are ſtrong enough for walking-ſticks. The *variegated* ſorts come only to half the ſize, and more frequently flowers.

Rhubarb, the common ſerves for ſhow, and the ribs of the leaves for tarts; but the *Chineſe* principally, and then the *Tartarian* for medical uſes of the root: The *Chineſe* is deemed the true officinal rhubarb.

Rocket, (ſometimes called *dame's violet*, and *queen's gilliflower*) the ſingle is raiſed from ſeed, and the double from rooted ſlips and cuttings. The double is rather uncertain in continuance, and requires ſome attention. Cut the ſtems down as ſoon as off their principal ſhow of flowering, which is a means to help them to get ſtrong and encreaſe at root; and it is from *offſets* formed

formed in the preſent year, that they flower in the next. If weak, or ſmall roots are planted, they ſhould not be ſuffered to blow the firſt year. To *propagate* by *cuttings*, do it when the ſtems are about eight or nine inches long, (i. e. before flowering) making each into two; and plant them a little more than half way deep, in an *eaſt* border, in good freſh undunged ſoil. Keep them cool by occaſional watering, and if the cuttings attempt to flower, be ſure to nip the buds off. Cuttings of ſtems that have flowered, will ſometimes grow, but they make weak plants: A *hand-glaſs* would be of ſervice over them. See *pink* at the end of this ſection.

Rudbeckia, or *American ſun-flower*, is a little tender, and muſt be accommodated accordingly. Like the *rocket*, it is rather (ſome ſorts at leaſt) unapt to form *offsets;* and therefore to encourage the putting them forth, (without which the plant dies) the ſtems may be cut down to prevent flowering: That is, when plants are more deſired than flowers.

Ruſh will be proper only for places that are conſtantly wet, by ſtanding water; and in ſuch a ſituation they will prove ornamental.

Sarracena is a native of the bogs of *North America*. It requires therefore a moiſt ſituation; but is found to need protection from our ſharp froſts. The whole plant is of curious formation. It is not apt to ripen its ſeeds here, or to make offsets; ſo that both are frequently imported.

Saxifrage plants are uſually *potted* to move into the houſe when in flower, as indeed the *pyramidal* in particular ſhould be; but they are all very hardy, except the *ſtrawberry* ſort, (not very handſome) which is too tender to endure much wet and cold.

Senna, of Maryland, muſt have a dry ſoil and warm ſituation. It is annual in ſtalk, and therefore the roots may be well protected in winter: This flower makes a very handſome ſhow.

Solomon's ſeal is in greater variety, and there is one with double flowers. They all ſuit well in ſhady and moiſt places.

Starworts are in general of that hardy nature, that they will flower almoſt any where, and increaſe apace from the leaſt ſlip. They are apt, however, to loſe their lower leaves, in proportion to the ſhade, cold, and wet, they grow in; and the *Alpine* ſort will require an open ſituation, though, like the others, a ſtiff moiſt ſoil ſuits it. There are other ſorts. The three laſt, as blowing late, and not rampant, may be planted near the houſe.

Stock, this plant is rather of a biennial nature, but generally of longer duration. It is proper to *pot* and place in a window, on account of its ſize, riſing only a few inches. It is ſweet and floriferous, and altogether very proper for an edging.

Siſyrinchum, allow it an *eaſt* border, but dry ſoil; and as it is a ſmall flower, *pot* ſome.

Throatwort, the two firſt ſorts are claſſed with *campanulas*. The latter, which is the proper, or *mountain blue throatwort*, likes the ſhade, but muſt have a light dry ſoil. This, as the *ſnap-dragon*, and ſome others, will grow in the cracks of walls, &c. and continue longer in ſuch a ſituation, than a better: In moſt ſoils it proves often biennial.

Whitlow graſs is a wild (medicinal) herb, that grows on roofs and walls of old houſes, and rubbiſh heaps; but makes a pretty dwarf ſpring flower as an edging, &c. in a poor ſoil.

Worm graſs is a very neat little plant, with a flower bright red without, and a deep orange within.

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XII.

LIST of *bulbous*, *tuberous*, and *fleshy-rooted perennials*.

1 *Aconite*, or winter wolf's bane, yellow flower, Feb.
2 *Albuca*, or baſtard ſtar of Bethlehem, (leaſt) yel. June
3 ——— greater, or ſpear leaved, red flowered, June
4 ——— talleſt, with ſpined cluſters of wh. flow. June
2 *Anemone*, doub. broad and narrow leav. variety, May
2 ——— com. wood, doub. wh. pur. blue, red, March
2 ——— Appenine wood, doub. blue, pur. wh. April
2 ——— yellow wood, or ranunculus anemone, April
——— pulſatilla, ſee *paſque flower*
3 *Aſphodel*, or king's ſpear, yellow and white, *f. r.* June
2 ——— hollow leaved, and dwarf, white, *f. r.* June
1 *Bulbocodium*, or mountain ſaffron, purple, April
1 *Colchicum*, com. ſing. and doub. pur. pink, wh. &c. Sept.
1 ——— variegated flow. and a ſtriped leaved, Sept.
1 ——— mountain, (Spaniſh) red and ſtrip. red, Aug.
1 ——— eaſtern, varieg. leaf, chequered flow. Aug.
4 *Comfrey*, oriental, blue (April) and German, yel. June
4 *Cornflag*, or ſword-lily, crimſ. red, pur. and wh. June
1 *Crocus*, ſpring, yellows, a variety, plain and ſtrip. March
1 ——— ditto, blues, purples, white, pl. and ſtrip. March
1 ——— autumnal, or ſaffron, pur. blue, wh. yel. Oct.
3 *Crowfoot*, Alpine plantain leaved, white, April
——— ſee *crowfoot*, laſt liſt
3 ——— Pyrenean graſs leaved, yellow, May
4 *Crown imperial*, ſing. and doub. reds and yellows, May
4 ——— double crowned, triple crowned, May
4 ——— gold, and ſilver ſtriped leaved, May
1 *Cyclamen*, European, ſpring and autumn, pur. wh. April
3 *Daffodil*, a variety of yellows, ſing. and doub. April
3 ——— double yellow, with cup in cup, April
3 ——— yel. with wh. cup, and wh. with yel. cup, April
4 ——— tradeſcants large double yellow, April
2 ——— dwarf, or ſhort-ſtalked yellow, March

1 *Daffodil*, hoop petticoat, or rush-leaved yellow, April
3 ——— odorous, or sweet-scented starry, yel. April
——— white, see *narcissus*
——— sea, see *pancratium*
1 *Dog's-tooth violet*, purples, red and white, April
1 ——— narrow leaved, colours ditto, April
4 *Dog's-bane*, (tuberous asclepias) orange coloured, July
2 *Dropwort*, doub. flow. and varieg. leaved, white, June
3 *Fritillary*, common, and Pyrenean, a variety, April
1 *Fumatory*, solid, and hollow rooted, red, pur. wh. April
Gladiolus, see *Cornflag*.
1 *Herb-true-love*, nodding, and sessile flowered, pur. April
2 *Hyacinth*, a great variety, white, red, blue, &c. May
3 ——— tufted, (or fair-haired) bl. pur. and wh. April
1 ——— Spanish nodding flowered, red, April
3 ——— amethystine, a deep blue colour, March
3 ——— musk scented, purple and yellow, April
4 ——— monstrous flowered, or feathered, blue, April
1 ——— grape sorts, blue, white and grey, April
2 ——— lily, (yellow rooted) a blue star flow. June
1 ——— Peruvian starry, blue and white, May
2 ——— Italian and Byzantine starry, blue, April
1 ——— English starry, (autumn squill) blue, Sept.
1 ——— bell flowered starry, white with pur. May
——— *Indian tuberous*, see *tuberose*
3 *Jonquil*, single, semi and double yellow, April
4 *Iris*, or flag, or variety, pur. blue, yel. wh. &c. June
4 —— striped leaved stinking gladwin, purple, July
4 —— Siberian narrow leaved, blue with white, July
1 —— dwarf Austrian, purp. blue, red and white, May
1 —— vernal, or dwarf Virginian, blue, May
3 —— snake's head, or tuberous iris, purple, May
3 —— *Xiphium*, or Spanish bulbous, a variety, June
1 —— *Persian* bulbous, finely variegated, March
1 —— bulbous *Sisyrinchium*, blue and yellow, June
1 *Ixia*, large flowered, or crocus leaved, variety, June
1 —— Chinese sword leaved, yellow with red, July
4 *Lily*, com. sing. and doub. wh. orange and fiery, June
3 —— striped flowered, purple and white, June
3 —— striped leaved, of white and orange sorts, June
3 —— dwarf stalked, orange, or red flowered, June

Lily,

4 *Lily*, Conſtantinople, dependent flowered, June
4 —— proliferous, or many flowered ditto, June
4 —— com. martagon, or Turk's cap, purple, June
4 —— ditto, wh. red, imperial and double, June, July
4 —— pompony martagons, ſeveral colours, June
4 —— Chalcedonian martagons, ſcarlet and purp. July
4 —— ſuperb pyramidal martagon, variegated, July
4 —— Canadian martagou, plain, and ſpotted yel. Aug.
4 —— day, or lily aſphodel, yel. and tawny red, June
1 —— daffodil, or autumnal narciſſus, yellow, September
1 —— *atamaſco* amaryllis, carnation coloured, July
3 —— *Guernſey* ſcarlet and *belladonna* purple, Sept.
3 —— *pancratium* common, and Illyrian, wh. Aug. July
Martagons, ſee *lily* above
Meadow ſaffron, ſee *colchicum*
2 *Moly*, (flowering garlick) yel. wh. purp. and red, June
4 —— magicum, victorialis, and deſcendens, pur. July
3 *Narciſſus*, poet's daffodil, variety in cup, wh. May
3 —— peerleſs, or two coloured, wh. and yel. April
3 —— polyanthus, or multiflorus, ditto
2 —— late flowering, yellow cup, white, Auguſt
2 —— hoop petticoat, &c. ſee *daffodil*
2 *Orchis*, perennial, purples, reds and white, June, *d.*
2 —— biennial bee, or gnat orchis, red, June, *d.*
Ornithogalum, ſee ſtar of Bethlehem
1 *Orobus*, tuberous, or wood pea, red flower, May
—— fibrous rooted, ſee laſt liſt
4 *Pæony*, com. ſing. doub. reds, pur. black, white, May
4 —— Conſtantinople, large flower, blood red, June
4 —— Portugal ſweet-ſcented, deep red, May
3 —— ſmall narrow leaved, red flowered, May
3 —— dwarf, with a white flower, May
2 *Paſqueflower*, or *Pulſatilla*, bl. red and wh. April
2 —— *Siberian*, or *alpine* yellow, April
Pilewort, ſee *ranunculus ficaria*
2 *Ranunculus*, planted leaved Alpine, white, April
2 —— graſs leaved Pyrenean, ſtraw col. May
3 —— grandiflorous, or oriental great yel. May
1 —— ficaria, or *pilewort*, double yellow, April
2 —— *Turkey*, or turban, red, ſcar. yel. black, May
1 —— *Perſian*, a great variety, fine colours, May

Ranunculus, see *crowfoot*, last list
2 *Saxifrage*, granulous rooted, double white, May
1 *Snow-drop*, single, semi-double, and double, white, Feb.
3 ——— great, spring, summer and autumn sorts
4 *Spider-wort*, savoy, *(Bruno's lily)* and others, wh. June, *m.*
4 ——— Virginia, *(tradescants)* blue, pur. &c. ditto
4 *Squill*, or common sea-onion, white flower, June, *d.*
4 *Star of Bethlehem*, pyramidal Portugal, white, June
4 ——————— Arabian, or Alexandrian lily, ditto
1 ——————— common wild, greenish white, May
1 ——————— ditto, with yellow flower, April
3 *Tooth-wort*, bulbiferous, seven lobed, purple, June
4 *Tuberose*, single and double flowered, white, July
4 *Tulip*, double, a variety, yel. and red striped, &c. June
4 —— parrot, or hooked-leaved, ditto, June
4 —— *Turkey* sorts, striped, great variety, May
2 —— ditto, early dwarfs, a variety, April
2 —— wild European, small yellow flower, April

*** The *propagation* of flowers in this list, is generally by *offsets*, or pieces of roots, having an eye, or bud, to it. Most of them may be raised also from *seed*; but this is a tedious method, and not ordinarily practised, except by curious florists. See page 284.

Some of this list, as most of the *bulbous* and *tuberous* roots, may be kept out of ground a long time, others a shorter; (see page 286) but those denominated *fleshy* roots, must either be planted immediately, or at least in a few days. It is common to them all to be taken out of ground for removal, *as* soon as their leaves decay, the roots then being in a state of *rest*, which is naturally longer, or shorter, in different plants; and if they stay in the ground till new fibres are shot, they are always removed with damage, if not death.

OBSERVATIONS ON PARTICULAR FLOWERS.

Albuca is too tender a bulb to endure much wet and frost, and therefore is usually planted in pots, for putting under shelter (as in a frame, &c.) in winter; but *may* be protected in the open ground, by covering with a glass, or garden-pot, towards the end of autumn, to keep

keep the roots dry; and before ſharp froſts come, covering round with litter. By ſuch a practice, ſeveral ſorts of tender things that die down to the ground, may be preſerved abroad.

Anemone, the garden (in contradiſtinction to the wood) we have in great variety of very fine ſorts, divided generally into two kinds; i. e. narrow and broad leaved; the latter is the hardier. The full doubles only are eſteemed choice flowers; but the ſemi-doubles, and ſingles, are ſhowy enough for ordinary borders. The *ſingle*, or *poppy* anemonies, (ſo called from their form) frequently blow as early as *February*, or ſooner: and thus become valuable, for decorating the ground at ſo dreary a ſeaſon. The *wood* kinds bear large flowers; and are very uſeful ornaments for the borders of *ſhrubberies*, &c. at an early ſeaſon, for which reaſon, they ſhould be planted in the moſt frequented ſhady places.

Colchicum, or meadow ſaffron, flowers about *Michaelmas*, and may be kept out of ground from *May* (or decay of the *leaf*) to *Mid-Auguſt*. It is a remarkable property of this flower, (not however peculiar to it alone) that it makes its appearance before the leaves, which grow all winter and ſpring. The *colchicums* are pretty plants for the end of the flowery ſeaſon, (*October*) which makes them eſtimable objects near the houſe, where they may be often ſeen. The flower ſometimes called *ſpring colchicum*, is the *bulbocodium*, which ſee.

Cyclamen, the ſorts flowering in *winter* (*Perſian*) are too tender for open culture; but cloſe under a warm wall, with occaſional protection of a *hand-glaſs*, they have ſucceeded. A culture of this nature is rather to be *attempted*, as houſing (except in places where they have *much* air) does not ſuit them; the roots often moulding and rotting when kept cloſe. The *colours* of the *Perſian* ſorts are red, purple and white. Let them have a light, and deeply dug dry ſoil, not too much

much water, and none at all after the leaves begin to decay; for the roots then ceasing to act, would suffer by absorbing much wet, the leaves not performing their office of drawing it up, and discharging it. This observation applies to all bulbs and tubers, (in a degree) though few are so liable to rot as these.

Fritillary is of several colours, plain, chequered and spotted, white, purple, black, red, and yellow. The kinds are broad and narrow leaved; and there is a large double sort, a tall *Persian*, (three feet high) and a dwarf *Persian*, about half size, both having deep purple flowers.

Jonquil, or *rush-leaved daffodil*, has been always justly admired for a very neat sweet flower; but we do not so often meet with it, as might be expected. The single kinds are the most fragrant, and the large double is scentless. It is proper always to *pot* some, in order to bring them into the house when in flower, for their agreeable perfume.

Iris, the four first sorts rather prefer a shady moist situation; but will grow any where, and are commonly planted in odd spare corners of ground.

Ixias are, for the most part, *green-house* and *stove* plants; but these two sorts are found hardy enough to do ordinarily in open borders, in a light dry soil, and warm situation, a little protection being afforded them in severe weather.

Lily is a very ornamental and hardy flower in all its varieties, encreasing abundantly, and needing only to be removed every three or four years, for the purpose of taking away the offsets, and renewing the soil, for a superior blow. The *whites* will not keep out of ground above one month, but the *orange* for several. The *white* will flower tolerably in shade, but the *orange* much better; and as it is a gay flower, it serves well to enliven plantations. The *martagons* are generally not nice as to soil and situation; but the *scarlet* and *yellow* sorts, and *striped lily*, should have a light dry soil,

ſoil, and ſun. The *ſingle* white lilies are very ſweet; but the doubles are inodorous, as is the caſe with ſome other flowers, the fragrance ariſing from the *ſtamina* and *antheræ*, which are often ſmothered by numerous petals. The *Atamaſco*, *Guernſey*, *belladonna*, and *pancratium lilies*, are tender, and ſhould have a warm, or a good *auricula* ſoil, a full ſunny border, and well ſheltered ſituation; protect alſo from much wet in cold ſeaſons, and afford ſecurity from froſt. Theſe are very elegant and noble flowers, and the *Guernſey lily* is equal to, if not beyond, any plant in the flowery creation: This is, however, the tendereſt of the four: then the *belladonna*, and *pancratium lily*, or *ſea daffodil*; the *atamaſco* is the hardieſt. All of them are uſually potted for removing into ſhelter; but they *may* be managed (ſee *albuca*) ſo as to do abroad, except in the more *northern* and bleak parts of this iſland: They blow much the finer in open ground, (all things going on well) the roots having a free ſcope to draw nouriſhment, &c.

Orchis is rather difficult of culture: It likes a dry barren ſoil, and the *roots* ſhould be taken up (from the places it grows wild) *juſt* as the leaves decay after flowering: and with a ball of earth about them, as then the chance of ſucceeding is much greater. Upon removal, let them be planted directly, and remain in their places for years.

Pæony, the ſingle kinds are ſhowy, but the doubles are nobly ornamental. Let this flower have room, as it will ſpread (when in full ſized bunches) a yard round: and let it be planted out of the way of the full ſun, and of much wind, that the flowers may continue. It need not be removed for many years, and will grow in any ſoil and ſituation, even among trees, which adapts it for *ſhrubberies*, &c. The ſorts are divided into *male* and *female*; and the former, having loſt its flower, produces pods, containing rich crimſon grains, interſperſed with black berries, that look very pretty when burſt; and may be gathered as ſoon, or rather

juſt

juſt before they open, brought into the houſe, and put in vials, &c. as curioſities. Let this root be removed early in *September*, or at leaſt before the month is out, before new fibres are formed to the knobs of the roots.

Pilewort, (the double, prefers a ſhady moiſt ſituation; and is a pretty wild plant, though an humble trailer. It is called ſometimes the *leſſer celandine*, and alſo *figwort* erroneouſly.

Ranunculus, in all its ſorts, is very ornamental; but the *Perſian* kinds are beautiful, and of infinite variety. This flower is ſurely left too much to the culture of profeſſed *floriſts*; for why ſhould not every garden be adorned with it, ſeeing, that a little care, and not much ſkill is neceſſary in the management: it is hardy and encreaſes freely. See pages 285, 288.

Saxifrage roots of the double ſorts are like ſo many ſmall peas, and ſhould be planted five or ſix together, in order to form a full tuft of its flowers, which are full and white like a ſtock. The ſtems, being ſlender, will need the ſupport of a light ſtick, which it is beſt to fix in the middle at the time of planting, as putting one in afterwards might injure the roots. All ſolid rooted plants are liable to be hurt by puſhing in a ſtick too near for tying to; more care ſhould be taken in the buſineſs than uſually is: The practice of placing a ſtick at the time of planting is beſt, becauſe it may then be fixed cloſe: and it ſerves to ſhow where the roots are, that they may not be diſturbed before they appear above ground. This *ſaxifrage* is uſually and properly *potted*, though it does very well in borders, and makes a good appearance.

Spider-wort thrives beſt in ſhade and moiſture.

Star of Bethlehem, the two laſt ſorts, are proper for the edges of borders in plantations; and the pyramidal ſort is a proper flower to *pot*, mixing with others very ornamentally: The two firſt ſhould have a light dry ſoil, and are ſomewhat tender.

Squill

Squill will need a little protection from hard frosts; but is sufficiently ornamental to reward the trouble.

Tooth-wort thrives best in shade and moisture.

Tuberose, there is a dwarf stalked, and a variegated leaf sort of, but they are not so worthy of cultivation as the common single and double; of which two the *single* is preferable, as it blows better, and is more fragrant. See the end of this section.

Tulip (the *Turkey*) is classed into two sorts; the taller, called *serotines*, or late blowers; and the shorter, *præcoces*, or early blowers; some have made another distinction, *medias*, but it is not necessary. The *plain* tulips (as they generally are when they first blow from seed) are called *whole blowers*, or *breeders*; and according as they *break* into other colours, stripes, and variegations, (after transplantations) are denominated and classed into *baguettes*, *bybloemens*, *verports*, and *bizarres*. The *dwarf* sorts blow early, as *March* and *April*, (the *duke van tol* earlier) allow them therefore a warm border and dry soil, to preserve them from frost and wet, which they are rather impatient of. These are often *potted* and *forced* on a hot-bed, &c. or brought forward by water-glasses, in a warm room; but an *increase* of offsets, is only to be expected from open ground culture, and even there these early sorts do it sparingly. Take them up every year to remove the offsets, and renew the soil; and keep each sort separate, and *plant* them so, for then they will blow together, and be all of one height. There are about fifty of the early sorts; but the number of choice *fancy* tulips is more than eight hundred.

* * * * * *

THE following articles are detached as most conveniently inserted here:

Auricula is increased by parting the roots, or slipping rooted offsets from them; but offsets without roots

roots will ſometimes ſtrike, if well managed, by ſetting them in a good ſoil, (in pots beſt) where they have but little ſun, and keeping them *cool* by occaſional watering. When the roots are *divided*, (in *Auguſt*) let it be with a ſharp knife; and cutting off any cankered part, ſhorten alſo their ends, and let not the *tap* part of the root be too long.

The *ſoil* for auriculas ſhould be a good freſh light loamy *maiden* one, to which is added one third of *wood pile*, or *willow* earth, one of ſea, or any ſharp, or drift *ſand*; and a quantity, equal to the whole, of rotted *cow* dung, or in lieu of this, *horſe* dung. This mixture ſhould be well incorporated, at leaſt a year before, by frequent turning over, which ought to be repeated once a month without fail.

In *winter* ſome protection is neceſſary; but auriculas are not very impatient of froſt, which rarely hurts them if dry. Do not follow the cuſtom of ſome perſons, who lay the pots on their ſides in winter to keep them dry, and to cover with ſtraw, &c. For a ſhort time about *Chriſtmas* it may be allowed; but ſoon after, as they begin to ſtir in the ſhoot, it gives the bud a twiſt, if they remain long in this poſture. The beſt way to guard from ſnow, wet, and ſevere froſt, is either by frames, or plunging under a *ſouth* wall. Place a bit of tile at the bottom to keep out worms; and if the ſoil is moiſt, lay ſome drift ſand, or fine aſhes round their ſides, and over the tops.

Dreſs the pots towards the end of *January*, for then the plants begin to puſh for flower, and muſt be attended to, and aſſiſted. Strip off dead leaves. Take as much of the top mould off as can be, without diſturbing, or bruiſing the roots; and fill up with the *compoſt*, a little preſſed down. If the pots are dry from the ſhelter afforded them, give a little ſoft water in mild weather, about ten in the morning, and fail not to water duly, as the plants puſh forward.

Auriculas

Auriculas *in blow* ſhould be protected from rain, wind, and ſun, and their ſtems ſupported by little neat ſlender formed ſticks, or ſtrait ones, and tied with thread; and when *out of blow*, ſhould be ſet out of the ſun, but not under trees.

Shift or *tranſplant* auriculas every *ſecond* year, and that as ſoon as they are out of blow; thoſe, however, that produce many offsets, or are luxuriant growers, may be ſhifted every year. The more common practice is to move all in *Auguſt*.

To *raiſe* auriculas from the ſeed, in *February*, fill boxes, or pots, with fine ſifted middling compoſt; ſmooth the top perfectly level; ſcatter the ſeeds evenly, and cover not more than the thickneſs of a ſhilling. Set the pots, &c. on tiles, or boards, under a warm wall, and keep the ſurface moiſt. It is a good way to mix the ſeed with a like quantity (or a little more) of *fine* wood aſhes; and to lay ſome ſmall pieces of *furze*, or light *thorns* over. Remove them (as weather dictates) to ſhelter, or protect them from cutting wind, much froſt, or heavy rain, &c. and by *May* expect them to appear, when take the *furze* off, and cover with a net; let them have only the *morning ſun*, keep them moiſt, and when they have got ſix leaves, prick them out three inches aſunder, in boxes, or pots; and early in the next ſpring, plant them at ſix inches aſunder, and protect from wet and froſt.

Carnation is uſually propagated by *layers*, (ſometimes by *pipings* or *cuttings*, as *pinks*) about *Midſummer*, or as ſoon after in the ſeaſon as they will admit of it, by their length and ſtrength, and the work is thus: Strip off the leaves from the lower part of the ſhoot; at the middle of it, cloſe below the joint, cut it half through by an upward direction, with a thin, narrow, ſharp knife, and continue the ſlit exactly up the middle from half to three fourths of an inch; peg the ſhoot down into the earth (being before *well* looſened) as low as it will bear bending, ſetting the layer upright.

This

This buſineſs muſt be done with a careful hand, leſt the layer ſhould ſnap off. Now, or rather before, cut off the ends of the longeſt of the top leaves, that the worms may not draw them in, and diſturb the layer. The ſoil *(fine* and *good)* may be raiſed about the layers as occaſion requires. *Water* them to ſet the earth cloſe, and always keep it *cool*. In ſix weeks, or two months, they will be rooted, fit for *tranſplanting;* cut them from the old plant (at the peg) with a ſharp knife, and take them up carefully, that their very tender roots may not be broken off, keeping a little mould about them, if poſſible: but plant them not deep, as they are then liable to decay.

The *ſoil* proper for carnations, is a hazelly, or ſandy loam, procured from a paſture, by a ſpit of about eight inches depth, the turf being well broke, frequently turned, and laid ſo long together, as to be nearly conſumed; then add a little *lime*, (or not) and one third, or one fourth, of very rotten dung, (*cows* beſt) and let this be well mixed, till *thoroughly* incorporated, which will be ſome months firſt; then ſcreen it, or ſift through a coarſe ſieve. The ſoil for carnations muſt be *rich;* but yet *dung* is found ſo injurious to carnations, that ſome floriſts depend upon a good freſh ſoil alone; carnations are alſo (except in ſummer) impatient of much *wet*. See to them in the *winter* and give pots of them protection from great ſnows and froſt, by frames, or mats on hoops, ſet rather high. *Turf aſhes*, or thoſe of any vegetable, may be mixed with a freſh maiden ſoil, but not too freely for a *compoſt:* A *ſmall* quantity of fine *ſoot*, or *wood aſhes*, may be alſo uſed. Dreſs pots of carnations in *March*, as directed for the auricula. Take care not to plant too ſmall pots.

To *raiſe* carnations from *ſeed*, ſow thin in boxes, or pots, (in a ſoil as above) early in *April*, and let them have only the morning ſun. When advanced a little in growth, (as about *Midſummer)* take the firſt opportunity of moiſt weather, and prick them out at three

three or four inches asunder, into open ground, and give a little water. If dry weather, contrive to *shade* them about ten days, or a fortnight, with mats hooped over, which remove in shady, or showery weather. When they have grown here a month, or six weeks, (or before *August* is out) plant them in a bed, where they are to blow, at nine or ten inches distance, and shade, if necessary. See *January*. *Seed* is best saved from *good* seedling plants, rather than those long propagated from layers, &c. Guard against *mice* in winter.

Geranium, African, (Pelargonium) is propagated by *seeds* and *cuttings*. The former produces the most free growing plants; but as luxuriance is not desirable in things confined to pots, (as *geraniums* must be) and as the propagation by *cuttings* is so easy and expeditious, it is the mode of culture that generally prevails. The young plants from *cuttings* are also hardier than those from *seed*. If raised from *seed*, sow in *April*, in a light and good soil, warm border, and under a hand-glass, keeping the earth somewhat moist; but it is best to make use of a gentle *hot-bed*, giving plenty of air to the plants, when they appear, which on natural ground will be five or six weeks in coming up, and on a moderate heat about three. If raised from *cuttings*, use shoots of the last year's growth, strait and short jointed. Plant them in a fine rich soil, two or three inches, or at the most four deep, and eight or nine inches asunder, or less, if more convenient. Or the rule may be, to plant the shorter cuttings in two thirds of their length, and the longer one half; but it is an error to put them in the ground so deep as some people do. Those raised on a little heat will be sufficiently rooted in two months to transplant into small pots; (shortening the longer roots a little) and those in the cold ground will be ready in three months, and sometimes less. A *hand-glass* set over *geranium* cuttings (or any other) will greatly facilitate the business, as is directed for *pinks*. If the cuttings are *raw*, or *long*, take the upper part off down

to an eye. If a hand-glaſs is not uſed, lay ſome moſs round the cuttings to keep the ground cool. In general it may be proper to keep the cuttings out of ground a day, or two; but the ſoft and ſucculent ones ſhould by all means, in order to dry the ends, and ſo heal the wound, which, if put directly in the ground, might decay and rot.

The proper *ſeaſon* for planting is from *Mid-May* to *Mid-July:* a little earlier, or later, may however do: Some chuſe to forward them on *heat*, in *March* and *April;* but they muſt not be kept cloſe. It is adviſeable to take cuttings from towards the top of plants, in order to keep them down; but where they can be beſt ſpared (as to the form of the plant) is the general rule. Pot them in *Auguſt* or *September*, according to the time the cuttings were put in: The former time is much the beſt, and *June* cuttings will be rooted.

The *management* of geraniums is, to keep them from *froſt*, and as much as may be from *harſh winds*, particularly in the *ſpring*; as after being houſed all winter, they are then tender, and far leſs able to bear unkind weather, than in *autumn*; when having been uſed to the external air, and the colder weather coming on by degrees, they are ſeldom hurt much, but by abſolute froſt. In the *ſpring*, they muſt be brought to bear air by degrees, and the more carefully, according as the *winter* has occaſioned them to be more or leſs deprived of the external air being let in upon them. When the weather is mild in *April*, let them be taken out in the day, (if convenient) and put in on nights; and venture them not wholly abroad till *Mid-May*, or after. In the *ſummer*, they ſhould be placed in *ſhelter* and *ſhade*; but not under trees, or any roof: The morning ſun is all they ſhould have, for more of it dries the mould in the pots too faſt, and fades the flowers. They will want frequent *watering*, ſee page 277. They may take up their *ſummer* reſidence about *Mid-May*, (as directed) but the *ſeaſon*

muſt govern; and it will not do to bring them out in a harſh one, which would pinch up the leaves, and deprive them of their beauty. If put cloſe under a *ſouth* wall for a week or two at firſt, it would be proper; or an awning of mats might be uſed for nights.

Shifting geraniums ſhould generally take place once a year, from ſmaller pots into others *one* ſize bigger: This may be in the firſt mild weather in *April*, or *May*. Looſen, and take off the top mould down to the roots, (without damaging them) then turn the pot up, and gently ſhake it out. If the roots adhere to the ſides of the pot, give the edge a tap upon the knee, or ſomething elſe, and a little preſſure at the hole, with the thumb, or finger, at the ſame time, which will help to diſcharge it. Pare off the matted roots round the ſides and bottom, with a *ſharp* knife; and plant it in a freſh pot, (or the ſame again may ſometimes do) putting in as much fine light rich mould, or compoſt, at the bottom, as will raiſe the ball of earth, which is about the roots, within an inch of the top of the pot; then fill round the ſides, putting the mould by little and little in, and preſſing it down gently, make all level to the top within half an inch; finally, give a watering that ſhall ſoak to the bottom, and ſprinkle ſome dry mould over. All ſhifted plants ſhould be kept rather in the *ſhade* for a week or two till ready to ſtrike root.

If any *ſticks* are to the plants, they muſt be taken away firſt, and replaced (if neceſſary) again before watering, or rather the next day, if the plants will ſtand up without. This may be a proper time to *trim* off all dangling, or too crowding ſhoots; but if *cuttings* are wanted for encreaſe, they ſhould not be *trimmed* till theſe are to be planted. At any rate, dead leaves, or unſightly crooked parts, ſhould be diſcharged, and *ſymmetry*, in a ſnug round head, provided for. Geraniums are free growers, and it is always adviſeable to take off *ſome* ſhoots to keep them down and in form. A few of the plants, that moſt need it (as leaſt

handſome or healthy) ſhould be *ſeverely* cut, for a late blow, which generally proves a *fine* one in conſequence. A judicious regular uſe of neat ſlender *ſticks* is of much advantage to *geraniums*, or other potted plants.

What has been ſaid of *geraniums*, applies to *all* thoſe EXOTICS, called *Greenhouſe Plants*, in the management of which, it is a material thing not to ſhift into too large pots, as the roots run directly to the outſides, and ſo would be too haſtily brought to require the biggeſt pots. Another thing is, to take off ſome of the top ſoil, not only as directed in *ſpring*, but once or twice in the *ſummer*; and always before houſing in *autumn*, and replacing it with a rich *compoſt*, as one of almoſt all rotten *cow* dung, which being *black*, is the moſt ſuitable to the eye, and it is cool and nouriſhing.

It is material to *neatneſs*, and the end of *ornament*, (for which plants are chiefly potted) that the pots ſhould be occaſionally waſhed, or ſcoured, and by no means ſuffered to get mouldy. This is a point ſo little attended to, that we ſometimes ſee a beautiful plant in a very diſguſting habitation. It is equally offenſive, and injurious, to ſuffer the ſurface earth to get moſſy, or caked hard by the neceſſary waterings; to prevent which, often ſtir it a little depth, and lay it ſmooth, which makes all look creditable.

Pinks are ſometimes *layered*, or more uſually propagated by *cuttings*, or *pipings*, about *Midſummer*; and may be alſo by *ſlips*, ſet in *March*, *April*, or *May*, with, or without roots, four inches aſunder. *Cuttings* ſhould be young ſtrong ſhoots of three or four inches long, taken off juſt below a joint; from which ſtripping the lower leaves, and cutting the top ones ſhort, plant them in a fine good ſoil, about two inches aſunder, and in depth full half of their length. They will ſtrike root, ſo as to be fit to move, in ſeven or eight weeks, with a little earth about their roots; or may be left to an early time in the ſpring; but where this is deſigned, they will be beſt ſix inches aſunder. They may

may be either put in *pots*, or *borders*, where they are to blow, or rather into a nurſery-bed, to grow a year at ſix inches diſtance. *Pipings* are obtained by drawing the heads of the young ſhoots out of their ſockets, of the length of cuttings. In both methods, puſh the ſhoots carefully into the earth, gently preſs the mould about them, and give a watering; ſhade alſo from much ſun. They will ſtrike more certainly, and much ſooner by being covered *cloſe* with a *hand-glaſs*, as much as poſſible air-tight. They muſt be kept cool, by occaſional watering; but when under glaſs, they will not need ſo much watering or ſhading, or may do without any; for though the incloſed air is warmer, it is always more humid, which refreſhes the cuttings with anſwerable ſupply for their ſupport; and it is this moiſture and warmth that facilitates the growth. When they appear to be growing, the glaſſes muſt be raiſed, and in a ſhort time removed. To *raiſe* pinks from *ſeed*, follow the directions given for *carnations*.

Polyanthus is propagated by parting the roots in autumn, or (for new varieties) by *ſeed* ſown and managed (nearly) as directed for *auriculas*: But as this flower is not ſo delicate in the cultivation, it may be ſown in borders, where there is only the morning ſun, any time from *Auguſt to April*; and as ſoon as the plants are at all big enough to prick out, ſet them four inches aſunder; and ſome time in *Auguſt*, plant at ſix inches, where they are to remain for their firſt blow; which ſhould be attended to, in order to mark the beſt flowers, dividing theſe into two ſorts, prime and middling; and the reſt may be either planted into ordinary ground in plantations, &c. or caſt away: There will be but few real *good* ones in a great many; but the culture of this plant is ſo eaſy, that it is worth while to try for them. Some ſow in *pots*, and *boxes*, in *December*, placing them in the ſun, and houſing them in ſevere weather; and when the plants appear, ſet them in an *eaſt* aſpect, leſt much ſun deſtroy the young plants;

early in autumn, or ſpring, is however better: The *ſeed* may be covered a little leſs than a quarter of an inch. Both ſeeds and ſeedling plants ſhould have occaſional watering, as moiſture ſuits them.

A *compoſt* for the polyanthus is a light *loam*, (as the firſt ſpit from the paſture rotted down with the *turf*) and about one fourth part *cow dung* or *wood pile* earth. If the loam is ſtrong, a little drift ſand amongſt it will be proper. The polyanthus grows any where, but a cool ſoil and ſituation ſuits it beſt; and ſome *compoſt*, as the above, with an *eaſt border*, is neceſſary in order to a capital full truſſed blow.

Tuberoſe is blown fineſt in a *hot-houſe*; but if planted in pots, and plunged at the back of a *hot-bed* frame, it ſucceeds very well. This will be beſt done about *Mid-April*, as ſooner they are apt to get too tall before they can ſafely be expoſed abroad. Provide a good *freſh* light earth, and uſe no dung, except a little rich and dungy, to lay an inch below the bottom of the bulb; fill the pots only three parts, and place the root only half way, or a little more, in it. Let the mould be ſomewhat moiſt, but give no water till the ſhoot appears, and then moderately; at which time, fill up the pot, juſt to cover the bulb, which ſhould be but barely hid, when the pot is full. The beſt ſhaped pots for bulbous roots is, when they ſtand high, and the bottoms are as wide as the top; and the ſize for the *tuberoſe* ſhould be thoſe of eight or nine inches diameter at top, according as the bottom is for width; for the more ſpace below, the leſs is required above.

As the *ſhoots* advance in growth, the more air muſt be given; and as freely as poſſible on mild days, ſhutting cloſe on cold nights, and almoſt ſo on moderate ones. When they get too high for the frames, and the ſeaſon is forward, with kind weather, they may be plunged in the ground, cloſe under a warm wall; and a covering of mat contrived to protect them a while on nights, or may do if left to take their chance. If

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the weather is foul, they may be houſed in a good window, for a week or a fortnight, and then put in the ground as directed above. Here let them remain, giving occaſional *watering*, (and freely in dry weather) till in flower; when the *houſe* (allowing them light and ſun) will be their proper reſidence, for their fine powerful ſcent, and to protect the blow, that it may the longer continue. In their flowering ſtate, they will want much water.

The *heat* on which this flower is forwarded ſhould be *moderate*, otherwiſe it will run up too faſt. If planted under a *ſouth wall* in *May*, covering the root about an inch, and guarding againſt much wet till it is growing, it will do for a late blow: A *hand-glaſs* of courſe would be ſerviceable, both to aſſiſt it in ſhooting, and ſhelter it from unkind weather; but cloſe covering is as much as poſſible to be avoided. Freſh *roots* are imported every year;—the double never flowers twice with us, but the ſingle may, if kept in a dry warm room.

SECTION XX.

A CALENDAR.

THE *general* work of gardening has been pretty fully ſpoken of, in the parts concerning the *formation*, *cultivation*, and *management* of a *garden*, *propagation*, &c. The *particular* culture of *eſculents*, *herbs*, *fruits*, and *flowers*, has been treated in the ſections appropriated to each. It therefore remains to give *here* little more than ſhort *hints*, by way of aſſiſting recollection, and to make proper *references* to the pages, where *farther inſtructions* may be found.

What is ſaid concerning *ſeeds* and *ſowing*, page 57 to 64, muſt be attended to. It need only be farther obſerved, that as to the *ſeaſon* moſt proper to do the ſeveral works of gardening, it is not the ſame (exactly) every where, as *ſoil* and *ſituation* make a difference.—The *time* mentioned in this *calendar* is, that which the author judges will be found moſt *generally* right in the midland counties, as the extremes of *north* and *ſouth* make a great difference in this buſineſs, which muſt be allowed for.

The *work* of gardening being very multifarious, it would be a practice not unworthy, even the ſkilful gardener, to make it a *rule*, once a week, to conſider what *is* to be done the following week; and to make *memorandums* accordingly, numbering them in the *order* he would have them performed.—Thus he would never be at a loſs, what to ſet himſelf, or his labourers about, and the mortification of omiſſions, or appear-

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ance of neglect, would be avoided: This *calendar*, it is presumed, will be found a ready and sufficient assistant upon such an occasion, the author having endeavoured to make it plain, comprehensive, and as concise as possible.

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JANUARY.

LET every thing be done now, that the weather and circumstances will permit, (though not absolutely necessary) in order to lessen the work of *next month*, which when it happens to be an open season, is a very important one in the way of gardening, in which the loss of a single fine day is of consequence.

MISCELLANEOUS WORK.

Frost protect things from, as they may need it.
Earth-up any roots bared or disturbed by frost, 49.
Dung for *hot-beds* should be duly attended to, 171.
Manure and *compost* heaps turn frequently over.
Espaliers, *garden frames*, and such things, rectify.
Tools, make, repair, sharpen and brighten, 276.
Fruit, *onions*, &c. the stores of, look over, 263, 229.
Brush-wood, prepare ready for sticking peas, &c. 231.
Planting, trench and prepare ground for, 28, 95, &c.
New-planted trees, protect and tie to stakes, 89, 100.
Old trees dig about, and dress with some manure, 45.
Prune espalier trees, standards and shrubs, 160, 166.
Moss, clear trees and shrubs from, in moist weather, 162.
Vermin set traps for, and oppose all annoyances, 233.
Webs and *nests* of caterpillars, slugs, snails, destroy, 56.
Beds and *borders*, weed, stir the ground, and rake, 49.
Cauliflowers and *lettuces* in frames, &c. attend, 214, 227.
Endive, tie up, when dry, to blanch; and protect it, 220.

Cions, procure for graffing, except apples, 82, 85.
Hot-beds, prepare for, or make, cucumbers, &c. 169, 177.
Drain ground, ſcour ditches, plaſh hedges, &c.

SOW

Cucumbers, 176. *Melons*, 192. *Peas*, 230. *Beans*, 206. *Spinach*, 243. *Radiſhes*, 238. *Lettuces*, 226. *Creſs*, 249. *Muſtard*, 253. *Carrots*, 212. The five laſt on *heat;* to which may be added, *rape* and *lap-lettuce*, 228, as ſallading; towards the end of the month, however, they may be ſown on warm borders, the ſallading being under cloſe hand-glaſſes.

PLANT

Mint on heat, 253. *Cabbages* at diſtances as 211. *Trees* and *ſhrubs* of the deciduous kinds, *grape vines*, *currants*, *gooſeberries*, and *raſpberries*, if mild weather, ſo that the ground will work looſe. Layers may be removed; but rather prepare the ground now for planting them next month, 95, &c.

PROPAGATE

Trees and *ſhrubs* by ſuckers, layers, cuttings, 64, &c.

FLOWERS.

Pots of, (ſee *December*) *tulips*, *anemonies*, *ranunculuſes*, *hyacinths*, *narciſſuſes*, &c. above ground protect, 289.
Bulbous and *tuberous* roots now plant for a late blow, or in the next month; but preſerve them if choice ſorts from much wet, leſt they rot, 286.
Auriculas, if diſturbed by froſt, dreſs and protect, 358.
Carnations, and all hardy plants, in pots, protect, but give them as much *air* and *ſun* as may be, 361.
Flowering ſhrubs may be planted, if open weather, covering the roots well; but it is better done next month, getting the ground ready now, 107, &c.

NURSERY.

NURSERY.

Vermin, guard againſt in time, on ſeed beds, &c. 72.
Dig beds for *ſowing*, next month tree-ſeeds, &c. 71.
Protect ſeedling trees (particular *exotics*) from froſt.
Plant, or *tranſplant*, hardy things, cover the roots.
Prepare ground for next month's *planting* out ſeedlings, or ſtocks for graffing another year, 72.

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FEBRUARY.

WHEN the ground can be conveniently worked, this is a very *buſy* month, and no time muſt be loſt, nor hands ſpared, that every thing may be done in its proper, or earlieſt ſeaſon.

The *laſt* week is the principal, in which *many* things are to be done, and ſome *full* crops ſown: The *ſkilful* gardener is properly aware of this, but ordinarily the month of *February* is too much neglected.

MISCELLANEOUS WORKS.

Ground, prepare for *planting* and *ſowing*, &c. 45.
Borders ſhould be ſtirred, dug, or dreſſed, 29, 138.
Gravel walks, weed, moſs, put in order, and roll firm, 54.
Turf, prepare the ground for laying, by levelling.
Graſs plats and *walks*, clean up, cut the edges, 54.
Compoſts and *manures*, turn over, and break well.
Hot-beds, attend regularly, and no neglect, 179, &c.
Stable dung, for hot-beds, now manage properly, 171.
Cauliflowers and *lettuces*, ſee to, as in the laſt month.
Earth up and *protect* plants from froſt and wind, 49.
Stick-peas, neatly, when about five inches high, 231.
Weed and *thin* crops, as winter onions, radiſhes, &c. 49.
Endive, attend, to blanch and ridge when quite dry, 220.

Vermin and *inſects*, ſee to, as mice, ſnails, ſlugs, &c. 233.
Birds, chiefly bull-finches, do much miſchief now.
Prune wall and other trees, but firſt grape vines, 129.
Moſs and *canker* clean trees of, moiſt weather, 162.
Cions for graffing provide, 82, and uſe them, 83, &c.
Edgings of thrift, a good time to make or repair, 55.

SOW

Cucumbers, 178, 219. *Melons*, 192, 228. *Peas*, ſmall, 231, large, 232. *Beans*, the broad ſorts, or the *mazagans*, if wanted early, 206. *Radiſhes* on heat, or not, 239. *Lettuces* on heat, or not, 227. *Small ſallading* on heat, or on a warm border under glaſs, 249. *Cabbages*, the ſugar loaf ſorts, 211; or if *early* ones are wanted, ſow the *Yorkſhire* ſort on heat, 212. *Savoys*, 241. *Onions*, 228. *Leeks*, 225. *Parſley*, 254. *Spinach*, 243. *Carrots* on heat, or not, 212. *Parſneps*, 230. *Celery*, 216. *Kidney-beans* on heat, 224. *Turneps* on heat, 244. *Cauli-flowers* on heat, 214.

PLANT

Cucumbers, 179, 184. *Melons*, 195. *Cauliflowers*, 215. *Cabbages*, 211. *Horſe-radiſh*, 221. *Garlick*, 221. *Rocombole*, 255. *Shalots*, 243. *Cives*, 248. *Mint* on heat, 253. *Potatoes*, early ſorts, on heat, and warm borders, 235. *Vines*, *wall*, *eſpalier*, and *ſtandard fruit trees*, *foreſt trees*, and *deciduous ſhrubs*, 80, 95, 107, 112.

PROPAGATE

Trees and *ſhrubs* by graffing, 83, by ſuckers, layers, and cuttings, 64. *Sow* kernels, ſtones, and ſeeds of fruit, &c, on fine well broke earth, providing *exotics* a little heat, 71.

FLOWERS.

FLOWERS.

See laſt month, *Biennials* and *perennials* plant, 283.
Shrubs protect, &c. 119: prune and dig about, 111.
Carnations, &c. houſed, bring abroad on mild *days*.
Auriculas, pots dreſs and regularly water, 358.
Auricula and *polyanthus* ſeed ſhould be ſown now, 359.
Bulbs and *tubers*, plant ſoon and pot ſome, 286.
Water pots, particularly woody and hardy plants.
Annuals, ſow about laſt week, 281; ſome in pots, 282.

NURSERY.

See laſt month. *Sow* hardy trees and ſhrubs, 71.
Tranſplant hardy ſeedlings of laſt year, and ſtocks for graffing next year, or the following, 72.

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MARCH.

THE *firſt* week in this, like the laſt in *February*, is very valuable to the good gardener, and *muſt* be made the beſt uſe of by thoſe who would have things tolerably in ſeaſon, and well furniſhed for the ſummer. It is therefore proper to have no regard to the charge of *neceſſary* aſſiſtance. Nature now waits for us, let us not neglect to attend upon her: This is the univerſal ſeed-time. See *management*, page 56.

MISCELLANEOUS WORK.

Order and *neatneſs* are now principal objects, 54.
Vacant ground, dig and apply manure where wanted, 47.
Borders dreſs, by weeding, digging, &c. ſee laſt month.
Gravel walks, clean, roll, re-lay, or make new, 54.
Edgings of thrift and box, if mild, repair, or make, 55.

Graſs

Graſs plats and walks make, cleanſe, mow, cut hedges, 54.
Herb-beds weed and dreſs, ſee article *balm*, 246.
Weeding in general ſhould be begun in time, 49.
Aſparagus beds, weed, carefully fork, and dreſs, 202.
Ditto, in dry weather, water as recommended, 205.
Strawberry beds, weed, ſtir the mould, and dreſs, 165.
Artichokes, dreſs, &c. towards the end of the month, 202.
Compoſts heaps, turn, ſcreen, or ſift, for pots, &c.
Vermin, *inſects*, and deſtructive *birds*, ſee to, 233.
Earth-up peas, beans, and whatever elſe needs it, 49.
Stick peas in time, and ſtop them, or not, 231, 233.
Stakes to trees, &c. ſee that they are faſt, 100.
Graff now, but apples towards end of the month, 81.
Prune wall trees without delay, but firſt vines, 148.
Bloſſoms of choice wall-tree fruit, defend, 145.
Prune, dig, dreſs, ſhrubberies and plantations, 108.
Hot-beds carefully attend, 180, and make new ones, 183.
Dung for future hot-beds, manage in worked heaps, 170.
Cauliflowers, &c. under glaſs, give air freely to, 214.
Stir mould about ditto, and alſo *lettuces*, 215, 227.
Prick out cauliflowers, cabbages, lettuces, &c. 214.
Orchards, dung, dreſs, prune, or ſmoak them, 43.

SOW.

See laſt month, *cauliflowers*, *ſavoys*, *onions*, &c. *Radiſhes*, the ſpindle rooted, 239. *Lettuces* of ſorts, 226. *Small ſallads*, 249. In the firſt week:—*Alexanders*, 201. *Aſparagus*, 203. *Beets*, 208. *Hamburgh parſley*, 230. *Salſafy*, 240. *Scorzonera*, 241. *Skirrets*, 243. *Finochio*, 250. *Red cabbage*, 212. *Turnep radiſhes*, 239. Second week: *Turneps*, on heat, and in open ground, 245; and *kidney-bean* on heat, or a warm border, 223. Laſt week: *Brocoli*, of the early purple autumn ſort, 210. *Naſturtiums*, 253. *Capſicums*, 248. *Love apples*, 259. *Herbs* of all ſorts, 246, &c. *Strawberries*, particularly *alpines*, 77.

PLANT

PLANT

Trees and *ſhrubs*, 30, 95, 107, 112. *Herbs* in rooted ſlips or cuttings, 246, &c. *Strawberries*, 38. *Aſparagus*, 204. *Artichokes*, 201. *Potatoes* and *Jeruſalem artichokes*, 222. *Lettuces*, 226. *Cauliflowers*, 214. *Other things* as laſt month.

PROPAGATE

Trees and *ſhrubs*, by graffing, 88; by ſuckers, offsets, layers, and cuttings, 64. *Herbaceous plants*, by parting roots, &c. 285.

FLOWERS.

The *hardy* kinds of flowers in *pots* that have been houſed, ſhould be inured by degrees to the weather, and ſoon left out on nights: None ſhould remain under cover more than *neceſſary*.

Pot deſirable hardy plants for moveable ornaments, when in flower; but not too many, 278, 282.

Auriculas, if not before, dreſs, and regularly water, 358.

Carnations dreſs as directed for auriculas, 358.

Tulips, *hyacinths*, &c. of the beſt ſorts, protect, 289.

Water potted plants duly as the weather is, 277.

Sow annuals, 273. *Biennials*, 282. *Perennials*, 283.

Take up, remove offsets, and divide fibrous rooted *perennial* flowers about middle of the month, 285.

Layers of carnations, pinks, &c. take up carefully ſoon, and pot or plant with earth to the roots, 360.

Seedlings of ditto, and other things, plant out.

Anemonies, *ranunculuſes*, and *bulbs*, may be put in (*eaſt* border) the firſt week, to blow late, 286, 287, &c.

Box, *thrift*, *daiſies*, *pinks*, &c. plant ſoon for edgings.

NUR-

NURSERY.

Remove litter, weed, ſtir the ground, and rake neatly.
Prune into form, ſhorten the leader, &c. to make a head, &c. 69.
Graffs of laſt year cut to a few eyes; behead as at 94.
Tranſplant and *ſow* as laſt month, and do it quickly.
Exotics, or tender plants, ſow on a gentle hot-bed, 71.
Water give in a dry time to ſeeds, ſeedlings, cuttings, and newly planted things; but not over much, 52.

* * * * * *

APRIL.

If by any means the proper early ſpring cropping of the ground has been prevented, make no *delay* to finiſh, and to get the garden into a complete ſtate of cultivation. This month may be mild enough to invite us abroad, to traverſe the walks, and view nature in her *ſpring* attire, "*all blooming and benevolent.*" Let nothing therefore be met with that appears ſlovenly, or diſguſting. See page 54.

MISCELLANEOUS WORK.

Borders, &c. weed, ſtir, rake, and clean up neatly, 49.
Quarters alſo weed, particularly beds of onions, 49.
Gravel walks and *graſs plats*, put in order, roll, &c. 54.
Turf, get, lay, but water frequently if dry weather.
Edgings of box, &c. make, repair, trim, or cut low, 55.
Watering omit not where neceſſary in a dry time, 50.
Pruning finiſh all ſoon; head down young trees, 130.
Graffs, ſee to, that the claying remains ſafe on, 84.
Bloſſoms of wall fruits, protect in bad weather, 145.
Dung for hot-beds, collect and take care of, 171.
Hot-beds, make in due time for fruiting *cucumbers*, 182.

Hot-beds,

Hot-beds, for *melons*, tender *annuals*, &c. 194, 273, 279.
Aſparagus, *ſtrawberries*, *artichokes*, ſee laſt month.
Cauliflowers, ſtir mould about, and earth up, 214.
Peas, earth up, and ſtick before they droop, 231.
Beans in bloſſom, crop the tops, and earth up firmly, 207.
Weed and *thin* all ſeedling crops, by hand or hoe, 49.
Prick out celery and plants of every kind when fit, 50.
Potatoes, early ſort, earth up, protect from froſt, 235.
Lettuces, tie up cloſe, and ſtir the ground about, 227.
Cabbages, earth up, and alſo tie up forward ones, 211.
Caterpillars, ſnails, and ſlugs, ſearch often after, 56.

SOW

As *ſoon* as poſſible, what was omitted laſt month, or the preceding. *Then*, *Salſafy*, 240. *Scorzonera*, 241. *Pumpions* and *gourds*, 237. Late *Savoys*, 241; and *Cauliflowers*, 215. *Boorcole*, 209. *Brocoli*, 210. *Bruſſels ſprouts*, 210. *Chou-Milan*, 218. *Chardons*, 218. *Kidney beans*, 223. *Cabbages*, chiefly the large *ſugar-loaf* for *coleworts*, 211, 219. *Herbs*, culinary and medicinal, 246, &c. *Naſturtiums* cold ground, 253. *Baſil* on heat, 247.

Succeſſion crops, of *cucumbers* and *melons*, for hand-glaſſes, &c. 188, 198, 200. *Peas*, large and ſmall. *Beans*, the broad ſorts. *Savoys*, *carrots*, *turneps*, *celery*, *lettuces*, *finochio*, *ſpinach*, and *radiſhes* cool ground, *ſmall ſallading*, weekly, on a *ſouth* border, *onions* to draw young, 61.

PLANT

Strawberries yet, but *alpines* ſucceed beſt ſo late, 38. *Aſparagus*, 204. *Artichokes*, 201. *Lettuces*, 226. *Chives*, *garlick*, *rocombole* and *ſhalots*, firſt week, ſee *February*. *Cabbages*, early and late, 211. *Cauliflowers*, 215. *Kidney beans* that have been raiſed on heat, 224. *Potatoes* for a full crop, 234. *Herbs* in rooted

rooted ſlips, 246, &c. *Trees* and *ſhrubs* immediately, and do it in the beſt manner, water, cover the roots, and ſtake the ſtems, 97, 107.

PROPAGATE

Trees and *ſhrubs*, by graffing, layers, cuttings, and ſowing, which may yet be performed, 64, 71, 79.

Herbs, by ſlips, or cuttings, in a good ſoil, and a ſhady ſituation, but not under trees, 246, &c.

FLOWERS.

Sow, in the firſt week, (if not done before) *annuals*, 273, 279, 280. *Biennials*, 282. *Perennials*, 283.

Plant, or prick out, *annuals* as the ſorts require, 274. *Biennials* and *perennials* of late blowers, may yet be tranſplanted into borders or pots, giving an immediate watering, and ſhading a few days from ſun, 283. *Carnation layers*, taking them up carefully with a ſcoop trowel, 276. *Pinks*, the ſame. *Tuberoſe*, 357.

Tulips, *ranunculuſes*, *anemonies*, &c. of choice ſorts, protect in ſevere cutting winds, 288.

Auriculas in bloom, ſhelter from rain, wind, ſun, and ſupport the ſtems by neat forked ſticks, 359.

Pots of flowers, ſhift, and dreſs, tie up, water, &c. 363.

Crocus leaves tie up, but do not cut them off.

NURSERY.

Weed, *water*, *ſtir the ſoil*, *rake* neatly, and *clean up*, 69.

Tranſplant (yet) ſeedlings of trees and ſhrubs; the *evergreen* ſorts it is now a good time for, 72.

Sow (if not done before) the ſeeds of foreſt trees, flowering ſhrubs and evergreens; but keep them *cool*, by watering, as every thing ſhould be, that is ſown or tranſplanted late in the ſpring: Yet they muſt not be kept ſoaked with wet, 71.

MAY.

* * * * * *

MAY.

LET this *charming* month be uſhered in with due reſpect, by the garden being in excellent order, to which end let no help be ſpared, when the *gardener* is not competent to perform the work himſelf: It is ſometimes too much for the moſt induſtrious man.

We now gather vegetables that have ſtood the *winter*, and been the care of many months, with ſome of the products of *ſpring* alſo; and it is the hope and fruition of reward that ſweetens labour: All the ſenſes are gratified at this ſeaſon.

— The ſoftening air is balm;
And every ſenſe and every heart is joy!

THOMSON.

MISCELLANEOUS WORK.

Neatneſs muſt be purſued, ſtir the ground, rake, &c. 49.
Gravel walks and *graſs plats*, keep in good order, 54.
Weeds, deſtroy every where, by the hand or hoe, 49, 54.
Water, if dry weather, new planted trees, ſhrubs, and flowers, ſtrawberries, cauliflowers, &c. 40, 51.
Thin all ſorts of ſeedling crops enough, and in time, 49.
Prick out lettuces, celery, brocoli, boorcole, cauliflowers, ſavoys, cabbages, leeks, &c. 50.
Earth up potatoes, peas, beans, cabbages, celery, &c. 49.
Tie up forward lettuces, and early cabbages, 211, 227.
Cucumber plants, give air, water, ſhade, train, 185, &c.
Hot-beds, make for cucumbers and melons, 173, 189, 199.
Regulate wall-trees, vines, and prune figs, 132, 149, 151.
Graffs attend to, and repair the claying, &c. 84.
Thin fruit that is ſuperabundant on wall-trees, 146.
Beans, top, when in bloſſom, and earth them up, 207.

SOW

SOW

Naſturtiums, *herbs*, and tall *kidney beans*, firſt week, 253, *Endive*, 220, and *purſlane*, 255, ſecond week, *Cauliflowers* about the middle, 215. *Celery*, 222. *Pumpions* and *gourds*, 237.

Succeſſion crops of *cucumbers* for picklers, 190. *Melons* for mangoes, 200. *Dwarf kidney beans*, *celery*, *radiſhes*, *turneps*, *cabbages*, *ſavoys*, *brocoli*, *peas*, *beans*, *finochio*, *ſalſafy*, *ſcorzonera*, *chardons*, *ſpinach*, *lettuces*, *radiſhes*, and *ſmall ſallading*, chiefly firſt week.

PLANT

Kidney beans that have been forwarded on heat, 223. *Cucumber* and *melons*, ſecond crop, 188, 198. Forward *gourds*, 237. *Lettuces*, 226. *Cauliflowers*, *ſavoys*, *cabbages*, *coleworts*, 217, 219. *Celery*, if forward, in trenches, 217. *Artichokes*, 201. *Potatoes*, 234. *Naſturtiums*, 253. *Capſicums*, 248. *Love-apples*, 259, and *baſil*, 247, towards the end of the month. *Herbs*, by parted roots, 246, &c. *Trees* and *ſhrubs* may yet ſucceed under good management, 101.

PROPAGATE

Herbs, culinary and medicinal, by ſlips and cuttings, but rather the latter. For *ſage* it is now the beſt time, 246, &c. See *Flowers*, article *ſlips*, &c.

FLOWERS.

Sow annuals of all ſorts for a late blow. *Scarlet bean*, ſow as a flower to run up pales, &c. 273, &c.

Thin ſeedlings ſoon, that they may not be weak, 275.

Prick out, or *plant*, the *tender annuals* in new hot-beds, pots, &c. as directed, 274, 276, 278.

Hot-beds of flowers, manage, as to air, water, &c. 280.

Biennials

Biennials and *perennials*, thin in time, and water them; alſo prick out any that are forward enough; they may yet be ſown, 282, 283.
Auriculas out of flower, remove out of the ſun, 359.
Tuberoſes, pot on heat, or under a ſouth wall, 357.
Tulips, *anemonies*, &c. in beds and in flower, protect, 288.
Bulbs and *tubers* of dying ſpring flowers, take up, 285.
Slips and *cuttings* of *pinks*, double *wall-flowers*, double *ſweet williams*, double *ſcarlet lychnis*, double *rockets*, and *lychnidea*, plant as ſoon as the young ſhoots are forward enough, 364, 333, 343, 346, 344.
Geraniums, plant cuttings of laſt year's ſhoots, 361.
Water ſeed-beds lightly and moderately in a dry time, 280; and pots of flowers regularly, 277.
Air, give to houſed plants freely, as the ſeaſon is, 362.
Dreſs, *ſhift*, and *tie up*, flowers and ſhrubs in pots, 363.
Pot ſome ten week ſtocks, mignonette, &c. 276, 278.
Support ſpindling carnations, &c. and weak ſhrubs, 55.
Stir the ſurface mould in pots of flowers, 362.

NURSERY.

Weed, *water*, occaſionally *ſhade* tender ſeedlings, 69.
Seed-beds, keep cool, for without moiſture, germination cannot be expected; but give water lightly, ſo as not to cake the ground, 51.

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JUNE.

In this month the gardener begins to find ſome *pauſe* to his labour. The ground is now fully cropped, as to principals, and the *chief* buſineſs is to ſee that the various plants, according to their different ages of growth, do not ſtand in need of the neceſſary aſſiſtance of *culture*, or good management. Particularly attend to trained trees, &c. to regulate them before they get into diſorder;—This do once a week.

MIS-

MISCELLANEOUS WORK.

Weed diligently, particularly close crops, 49.
Stir the ground between open crops, and rake, 49.
Gravel walks, *grass plats*, and *edgings*, see to, 55.
Water, let it be duly applied where necessary, 51.
Thin by hoe, or hand, all sorts of crops fully, 49.
Prick out things, *celery*, *endive*, *savoys*, *brocoli*, &c. 50.
Cauliflowers shewing head, break leaves over, 216.
Earth up high peas, beans, &c. see the last month.
Tie up the leaves of garlick and rocombole, 221.
Blanch lettuce, white beet, and finochio, 208, 227, 230.
Stick peas, and *top beans* when in full flower, 231.
Cucumbers, attend duly, to air, water, train, &c. 185.
Melons. ditto, prune, lay tile under the fruit, 195, &c.
Prune wall-trees, vines and espaliers, 129, 149, 160.
Blighted trees, pull off curled leaves, and water them forcibly and frequently with an engine, 52
Graffs that have clearly taken, unclay and unbind, 84.
Bud, or inoculate, at Midsummer, or soon after, 89.
Asparagus, finish cutting before Midsummer, 206.
Herbs for drying, gather as directed, page 246.
Seeds also attend to, and gather if any ripe, 59.

SOW

Cucumbers, last crop, for picklers may do in open ground, if a good soil and sunny situation, 190.
Pumpions and *gourds* may succeed as ditto, 237.
Turnep radishes of all sorts, but chiefly the large white and black Spanish for autumn use, in cool ground, 239.
Endive for a principal crop, 220.
Succession crops of celery, *brocoli*, *peas*, *broad beans*, *kidney beans*, *radishes*, *lettuces*, *small sallading*, *purslane*, *turneps*, *cabbages*, *carrots*, *finochio*, and *spinach*.

PLANT

Cucumbers, 189. *Melons*, 199. *Pumpions* and *gourds*, 237. *Nasturtiums*, 253. *Capsicums*, 248. *Love-apples*,

apples, 259. *Leeks*, 225. *Celery*, 216. *Cauliflowers*; *brocoli*, *boorcole*, *savoys*, *cabbages*, and such like greens, at two and a half feet, or rather more for *cauliflowers*; less for *brocoli*, and *cabbages* if a small sort. Seedling *herbs*, 246, &c. *Moist weather* at this season is very advantageous for pricking out, or planting, and it must not be neglected when it occurs: Water at the time of planting, and afterwards as the weather may require.

PROPAGATE

Herbs by slips, or cuttings, in a good soil, and as cool a situation as may be, not under trees, 246, &c.

Layer the young shoots of *roses*, *evergreens*, or any shrub, or tree, that does not readily strike root from older wood, or send forth suckers; but make the soil rich first with compost, or short dung, and water the layers frequently, 66.

Cuttings, or the young shoots of some woody plants, may be made to strike root, see page 312.

About the second week is the best time to plant cuttings of *myrtles*, which should be young wood and short, about two inches. Keep them cool.

FLOWERS.

Annuals, tender sorts, pot and plant out into the borders; they will require a good soil, water, and a little shade at first, and chuse rainy or cloudy weather for the work, 276.

Pots of flowers set where they have only the morning sun, but not under trees, or any roof, except for ornament a while, when in blow, 278.

Trim, from dead parts, &c. perennials and biennials, 56.

Carnations, and other spindling flowers, support, 55.

Geraniums, plant cuttings of last year's shoots, 361.

Water pots of flowers duly, borders occasionally, 277.

Prick

Prick out feedlings of biennial and perennial flowers, particularly *carnations*, 360. *Pinks*, 364. *Auriculas*, 359, and *polyanthuſes*, 365, into ſhady places.
Plant ſlips, &c. of wall-flowers, &c. ſee laſt month.
Layer carnations, pinks, and ſweet williams, 359.
Auriculas ſhould be ſet in ſhade, except for ſeed, 359.
Spring bulbs, the leaves being decayed, take up, 285.
Autumnal bulbs, plant at the end of the month, 286.

NURSERY.

Weed, *water*, *ſtir* the ſoil, *rake* it, and clean up, 69.
Shade the tender feedlings, and late planted things, 51.
Seed beds, ſpring ſown, keep moiſt, and earthed up; in very hot weather, an awning of mats is advantageous on days. Seedlings in pots or boxes move into ſhade, but not under trees.
Thin young plants from growing thick and weak, 49.

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JULY.

THOUGH in this month there is a ceſſation from the great buſtle, and more laborious works of gardening, yet "*its many cares*" ſtill find employment for the willing hand; and moſt aſſuredly a good ſucceſs in the *end* will not be attained without perſeverance in the *means*. Let nothing therefore be omitted, that may tend to crown the gardener with credit, by a continued production of *fine vegetables*, *fruits*, and *flowers*. The *garden* now abundantly gratifies the *ſight*, the *taſte*, the *ſmell*; and thoſe who have the opportunity to enjoy it, ſhould be grateful to GOD—and the *gardener*.

MISCELLANEOUS WORK.

Prepare vacant ground for cropping, and let as little of it as poſſible lay rude and unproductive, 47.

Weeds

Weed, ſtir the borders, hoe between crops, &c. 54.
Water cauliflowers, and whatever elſe may need it, 51.
Gravel walks, graſs plats, and *edgings*, keep in order, 54.
Box, yew, &c. ſhould be clipped after, or in rain.
Earth peas, broad and kid. beans, celery, cabbages, &c.
Blanch white-beet, lettuce, and finochio, 208, 227, 250.
Stick peas, and running kidney beans in time, 231, 225.
Thin all ſmall crops to their due diſtances, 49.
Prick out celery, endive, brocoli, cabbages, &c. 50.
Seeds, gather as they ripen, leſt the beſt be loſt, 59.
Herbs for drying, gather as ſoon as in flower, 246.
Take up garlick, rocambole, ſhalots, 221, 225, 243.
Cucumbers and *melons*, attend, water, train, &c. 185, 195.
Pumpions and *gourds*, train, and water plentifully, 237.
Artichokes, take off ſmall ſide heads in time, 202.
Wall-trees, &c. regulate, and occaſionally prune, 132,
Vines ſtop, and take off the little ſide ſhoots, 150.
Thin wall-trees, &c. of ſuperabundant fruit, 146, 156.
Bud-graff, or inoculate, fruit trees, roſes, &c. 89.
Blighted wall-trees, attend to, ſee the laſt month.
Strawberry Runners take off; except the firſt, 77.
Kidney Beans, runners, train, and water if dry, 225.
Ants, flies. and *waſps*, take by vials of ſugar water.

SOW

Brocoli, firſt week cool ground a little, for late uſe, 210.
Endive, principal winter crop, in open ground, 220.
Peas and *beans*, early ſorts, may yet ſow, 208, 232.
Kidney beans, dwarfs, firſt week, ſouth border, 224.
Carrots, a few, cool ground, firſt week, and water both ſeeds and roots if dry weather, 212.
Radiſhes of any kind, but chiefly the large black and white Spaniſh turnep ſorts, water, 240.
Lettuces, the hardier, or winter ſorts, open ground, 226.
Spinach, firſt week, the *round* in cool ground, and in the laſt week the *prickly* ſeeded, 243.
Onions, a few Welch, and Straſburgh, ſecond week, 228.

Coleworts, firſt week for winter, laſt week ſpring, 219.
Turneps, any ſort, both early and late in the month, 244.

PLANT

Celery at ſix inches; *Leeks* the ſame or more. *Endive*, *lettuces*, *coleworts*, at a foot. *Cabbages*, *ſavoys*, *brocoli*, *boorcole*, and *cauliflowers*, at two feet, or a little more in a rich ſoil, particularly the latter: Give *water* at planting, and two or three times after, if not much rain ſhould fall.

PROPAGATE

Herbs, lavender, roſemary, ſage, propagate yet, by cuttings, or ſlips, occaſionally watering, 246, &c.
Trees and *ſhrubs*, by laying ſhoots of the preſent year; i. e. of thoſe that are not apt to ſtrike from older wood. Slips and cuttings of ſome ſorts, may ſtrike, by the help of a *hand-glaſs*, 66, 312.

FLOWERS.

Stir the flower borders, and rake them neatly, 54.
Pots of flowers, ſet in ſhade, and regularly water, 278.
Carnations and double *ſweet williams*, layer, 359, 333.
Pinks, plant ſlips, cuttings, pipings, or layer, 364.
Geraniums, *double lychnis*, *lychnideas*, *double wall-flowers*,
Rockets, plant cuttings, or ſlips, 344, 333, 361, 346.
Succulent plants (as *aloes*) may now be ſet abroad.
Annuals, plant out tender ſorts into borders, 286.
Ditto, quick blowers may ſtill be ſown, 334
Biennials, thin ſeed beds of, prick out, water, &c. 283.
Perennials, ditto, particularly auriculas, 359. Carnations, 361. Pinks, 364, and polyanthus, 365.
Larkſpurs thin, and pull up all the ſingle ones, 335.
Stocks, pull up moſt of the ſingle ones, 332.
Seeds, gather very regularly as they ripen, 56, 58.
Bulbous and *tuberous* roots take up in due time, 285.

Bulbs of autumn, as *ſaffron crocus*, plant now, 292.
Trim plants and ſhrubs, ſtraggling branches, &c. 56.
Support weak flowers and ſhrubs by proper ties, 55.
Minionette, ſow in pots, cool place, to flower in winter.

NURSERY.

Weed, *water*, *ſhade*, young tender ſeedlings, &c. 69.
Prune away ſuckers, or ſhoots from ſtems, &c. particularly thoſe that have been graffed, 93, 94.
Thin ſeedlings, ſhade by a mat, &c. new planted ones, but not from night dews, water, &c. 73, 51.

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AUGUST.

In this month (as in ſome meaſure before) the gardener anticipates products of the *future* year, and ſows various vegetables in *autumn* to ſtand the *winter*, for *ſpring* and *ſummer* uſe; ſo that, in this, and other reſpects, *Auguſt* is in truth an important ſeaſon, as will be ſeen by the work directed to be done. The *times* for the ſeveral *ſowings* ſhould be pretty exactly obſerved in order to ſucceſs.

MISCELLANEOUS WORK.

Weed, *water*, *ſtir borders*, *rake* and *clean up*, 50, 54.
Walks and *graſs plats*, attend, roll, mow, ſweep, 54.
Thin by hoe, or hand, young crops, in dry weather, 49.
Water ditto, as alſo new ſown beds, regularly, 50.
Prick out celery, and other things as winter greens, 50.
Earth up peas, beans, kidney beans, celery, greens, &c. 49.
Blanch endive, beet, chardon, finochio, 220, 208, 218.
Dig, or uſe a ſtrong hoe, between rows of plants, 49.
Vacant ground, clean, and prepare for uſe, 46, 47.

Stick peas, and take up the haulm of old crops, 231.
Stake tall plants which are ſtanding for ſeed, 59.
Seed plants ſupport, and gather ſeed as it ripens, 59.
Herbs, gather for drying juſt when in flower, 246.
Onions, preſs down the leaves to the ground, 229.
Shalots, *garlick*, *rocombole*, take up, 249, 227, 261.
Grape vines, prune, nail, and keep in due order, 150.
Wall-trees, eſpaliers, climbing ſhrubs, &c. regulate, 133.
Inſects about wall-trees, attend to. See blight, June.
Waſps, &c. take in trees, by vials of ſugar water.
Budding may yet be performed, firſt week, 89.
Buds that have taken of former work, unbind, 93.
Net fruit trees up, to keep off birds, and alſo fingers.
Gather fruit before the ſun has ſhone long upon it.
Mat up currants and gooſeberries for late fruit, 164.
Strawberries, clear from runners, weeds, leaves, 165.
Cucumbers, *pumpions*, and *gourds*, train, water, &c.
Pickling cucumbers ſhould be gathered twice a week.
Melons, prune, train, water ſparingly, 195.

SOW

Coleworts in the firſt week, 219; *cabbages* in the ſecond, 211; *cauliflowers* in the third, 214. *Onions*, Welch, a full crop, and a few *Straſburgh* a warm border, firſt week, 228. *Lettuces*, at the beginning, middle and end of the month, 226. *Small ſallading*, in a ſhady place, and water it, 249. *Chervil* and *American creſs*, ſecond week, 248, 250. *Radiſh*, both ſpindle and round rooted, 245. *Kidney beans*, dwarf, on a warm border, firſt week, 225. *Spinach*, round firſt week, prickly third week; the former at broad caſt, and the latter rather in drills, 243. *Turneps*, firſt or ſecond week, 244. *Carrots*, ditto, 214. *Herbs* firſt week, 246, &c.

PLANT

Without delay, leeks, celery, lettuces, endive, cabbages, coleworts, late brocoli, and boorcole, diſtance as laſt

month, though every thing planted late, may be ſo much the nigher, generally ſpeaking one third. *Strawberries* and *herbs*, culinary and medicinal, towards the end of the month, that they may be well rooted before winter, 39, 246, &c.

PROPAGATE

Trees and *ſhrubs*, by laying *young ſhoots* in fine rich earth, and keep the ground cool about them, 69.

FLOWERS.

Decayed parts, take off, trim, and tie to ſticks, 56, 57.
Shrubs, ditto, thin a little, and prune off ſuckers, 111.
Edgings, or *edges* of box, yew, &c. may be cut, 55.
Water potted flowers regularly, alſo others, 277.
Ditto all new planted things, and ſhade them, 275.
Annuals, hardy, ſow towards end of the month, 287.
Minionette, plant in pots, to flower in winter.
Biennials and *perennials*, plant, laſt week, 289, 291.
Saxifrage pyramidal, and double plant in pots, 355.
Geraniums, raiſed from cuttings, (or ſeed) pot ſoon.
Ditto, pots of, &c. ſtir, or freſh earth, 364.
Auriculas and *polyanthus*, tranſplant, part, &c. 359, 365.
Carnations yet layer; tranſplant early layers, 359.
Pinks from early cuttings may be fit to move, 364.
Sweet Williams layer, or tranſplant if rooted, 333.
Bulbous roots, as lilies, &c. take up for planting, 285.
Bulbous offsets, replant them without delay, 286.
Bulbs of autumn flowers, plant in firſt week; ſee *lilies*, *atamaſco*, *Guernſey*, &c. 262.
Succulent plants, ſhift (beſt ſeaſon) firſt week, 364.

NURSERY.

Prune ſuckers, ſide ſtem ſhoots, ſtraggling and luxuriant ones from the head; *ſtir* the ground, *weed*, *water*, *thin ſeedlings*, plant, ſhade, &c. 69, 51.

* * * * * *

SEPTEMBER.

GARDENS begin now to fail of their wonted *beauty*, and therefore dying flowers, all litter, and every thing unſightly, admoniſh the *gardener* to trim his plants, and clean the ground frequently, that all may be pretty if not gay. An attention of this ſort, ſtirring the ground, and raking it, will give an air of *freſhneſs* and *culture* highly pleaſing and creditable.

MISCELLANEOUS WORK.

See beginning of laſt month, *twelve* firſt articles.
Shrubs free from ſuckers, dig about, &c. 111.
Prepare ground for planting trees and ſhrubs, 103.
Turf, lay as a good time, beat, roll, and water.
Gather fruits as they ripen, and ſtore them well, 262.
Grapes, tie fine ripe bunches up in gauze or crape.
Figs, keep in cloſe training to ripen the fruit, 151.
Cucumbers cover on nights to prevent the ſpot, 190.
Pickling cucumbers, gather before they get ſpotted.
Melons carefully protect from cold and wet, 200.
Cauliflowers, prick out, put ſome on ſlight heat, 214.
Ditto, *Michaelmas* crop, if dry weather, water often.
Lettuces, prick out, at 4 or 5 inches, ſouth border.
Herb-beds ſhould be cleared and dreſſed this month, 246.
Naſturtiums gather before ripe for pickling, 253.
Onions, being dry and hard, take in, ſort, &c. 253.
Garlick, *ſhalots*, and *rocambole*, tie up, and ſtore, 221.
Seeds, ſuch as are well dried, dreſs and put up, 56, 59.
Beans, late, top them as ſoon as in flower, 207.

SOW

Spinach, *turneps*, *Welch onions* (thick) and *endive*, firſt week, for late ſpring uſe. Radiſhes of all ſorts, but chiefly

chiefly the large black turnep, 240. *Small ſallading*, every ten days, warm borders, or under glaſs, 250. *Corn ſalad*, 250. *Chervil*, 248, and *ſorrel*, 257.

PLANT

At diſtances as before, *coleworts*, *endive*, *cabbages*, *ſavoys*, *broccli*, *boarcole*, *Bruſſels*, *ſprouts*, *chou-milan*, and *celery*; alſo *lettuces* on dry warm ground, 226. *Herbs*, pot and medicinal, from parted roots, or offſets, 246, &c. *Shalots*, *garlick*, *rocambole*, 249, 227, 261. *Strawberries*, any time this month, (the ſooner the better) dreſs old beds and plants, 28, 77, 165. *Shrubs*, begin to plant towards the end, but let not the roots be long out of ground, 106. *Currants*, *gooſeberries*, and *raſpberries*, may be planted laſt week, 31, 38.

PROPAGATE

Trees and *ſhrubs*, by laying young ſhoots, and at the end of the month, cuttings may be planted, as of *gooſeberries*, *currants*, *laurels*, *honeyſuckles*, &c. 66.

FLOWERS.

Remove dead ones, *trim* the decaying, tie up, &c. 55, 56.
Annuals, ſow ſome of the hardy ſorts, firſt week, 281.
Biennials, plant out, reſerving a few for ſpring, 283.
Perennials, ditto, alſo take up, and part old roots, 283.
Pinks, from cuttings, &c. (if well rooted) plant out; alſo *carnations*, *ſweet-williams*, &c. from layers, 360.
Geraniums, from cuttings, or ſeed, plant without delay, in ſmall pots, ſhortening the roots, &c. 362.
Auriculas, dreſs, ſhift, ſlip, place in ſhade, 359.
Polyanthus, plant, part roots, or ſow the ſeed, 365.
Bulbs of autumn flowers, plant yet in firſt week, ſee laſt month; and thoſe of ſpring in laſt week, as *crocuſes*, early *tulips*, common *anemonies*, 286.

Lilies and other ſcaly bulbous roots, plant ſoon, 287.
Offsets from bulbs muſt be planted immediately, 287.
Beds for bulbous and tuberous roots, prepare, 293.
Edgings of box, thrift, or pinks, plant, cut, or repair.
Pots of flowers bring from ſhady ſituations to more ſunny ones; *exotics*, put in time under ſome degree of ſhelter, according to their nature; the *ſucculent plants* are impatient of wet, and cold, as alſo *variegated geraniums*; take them in ſoon; but give plenty of mild air.
Minionette in pots for winter, place under a ſouth wall.

NURSERY.

Weed, ſtir the ſoil, clean up, and water, if dry weather.
Dig about young trees, at the end of this, or the beginning of next month, as directed, 79.
Prepare ground for planting, next month. Stocks and ſeedlings, and ſowing ſeeds of trees and ſhrubs, 71, &c. *Cherry Stones* may now be ſown. *Evergreen* ſeedlings ſhould be planted out, laſt week, and watered, if a dry time, 72.

* * * * * *

OCTOBER.

THIS is the *chief* month of the year for planting trees, ſhrubs, &c. No part of it ſhould be loſt, in either working the ground *well* for the purpoſe, or putting in the plants without delay: Early planting, if the ground is fit, is of much conſequence. *Eſculents* are to have their winter quarters provided them as ſoon as poſſible in the month, as at the end of it the weather is often bad.

Now the virtues of *induſtry* and *perſeverance* will be tried to keep the grounds clean from falling leaves, &c. The *garden*, however, ought yet to be a ſource of

of pleaſure, and the weather is often ſtill inviting abroad: Surmount impediments.

MISCELLANEOUS WORK.

Dig, dung, trench, and *drain*, ground thoroughly, 46.
Prepare for planting, lay open the holes for trees, 97.
Rake leaves off borders and quarters, ſweep, &c. 54.
Gravel walks, and *graſs plats*, cleanſe, roll, mow, 54.
Turf will be well laid now, but do the work ſoon.
Caterpillars, deſtroy, for they do miſchief rapidly.
Thin, by hoe, ſpinach, &c. ſmall crops, by hand, 49.
Prick out cabbages for winter or ſpring planting, 211.
Hoe between rows of cabbages, &c. and earth up, 49.
Blanch celery and finochio by earthing; endive, beet, and chardons, by tying, 217, 256, 221, 208, 218.
Cauliflowers that are heading, break leaves over, 216.
Aſparagus beds and ſeedlings, dreſs, ſecond week, 205.
Strawberries, if not before, dreſs out of hand, 165.
Raſpberries, dreſs, and plant *coleworts* between, 165.
Seeds gather regularly and lay up thoroughly dry, 59.
Fruits, gather carefully, and houſe well, 262, 274.
Dig up, and ſtore clean and dry, *carrots*, 214; *potatoes*, 237; *parſneps*, 230; *Jeruſalem artichokes*, 222.
Dreſs about currant and gooſeberry buſhes, by digging in a little manure, cutting the ends of the roots.
Herb-beds ſhould always be dreſſed at this time, 246.
Vines, *wall-trees*, &c. regulate, if not fully prune, 142.
Grapes bagged in gauze, ſee to, leſt they get mouldy.
Shrub, &c. dig about, and put in good order, 111.

SOW

Beans, mazagan, third and fourth week, 207. *Peas*, ditto, early ſorts, 231. *Lettuces*, firſt week, warm border, 226. *Small ſallading*, warm border, under glaſs, 249. *Radiſhes*, early purple ſhort top, or early *Sandwich*, may ſucceed, ſouth aſpect, 240. *Carrots*, a few early horn, warm border, may be tried, 214.

PLANT

Anjou cabbage and *boorcole* yet plant. *Brocoli*, a few plants, firſt week, for lateſt ſpring uſe. *Coleworts*, firſt week, 219. *Cabbages*, any time, chuſing ſtrong plants, 211. *Endive*, firſt week, warm border, 220. *Celery*, firſt week, open ground, for late ſpring uſe, 217. *Cauliflowers*, ſettle ſoon, 214. *Lettuces*, 226. *Shalots*, *garlick*, *rocambole*, (dry ground) 243, 221, 255. *Strawberries*, firſt week, 39. *Wall-trees*, and other *ſhrubs*, any time, but evergreens, firſt week. *Herbs*, rooted ſorts, 246, &c. *Mint* on a little heat, protecting it, 253. *Layers* of trees and ſhrubs made laſt year; being rooted, take up well, and plant immediately, 97, &c.

PROPAGATE

Trees and *ſhrubs*, by *ſuckers*, 64. By *layers* of the young wood, roſes, jaſmines, bay, laurel, lauruſtinus, vines, figs, filberts, codlins, mulberries, &c. See liſts of trees and ſhrubs, 66. By *cuttings* or *ſlips*, gooſeberries, currants, berberry, jaſmines, honeyſuckles, laurels, box, &c. 66. See liſts, ſect. 19.

FLOWERS.

Look over, trim, tie up, gather ripe ſeeds, &c. 55, 56, 59.
Geraniums, and other tender plants, dreſs, houſe, 362.
Auriculas and *carnations* in pots, preſerve from much wet, and ſet in ſunny ſituations, 358, 359.
Seeds, or *ſeedlings*, in pots, or boxes, ditto, and ſhelter from the cutting N. E. winds, 359.
Annuals, ſelf-ſown, &c. may be taken up with a little earth, and planted where wanted, 281.
Biennials, plant out, but leave a few for ſpring, 282.
Perennials, ditto, alſo ſlip or divide old roots, 285.
Bulbous or *tuberous*, and *fleſhy* roots of ſpring and ſummer flowers, plant, but the earlieſt firſt, 285.

Minionette,

Minionette, pots of, houſe, or put under glaſs.
Saxifrage, pyramidal and double, plant in pots, 356.
Edging of dwarf flowers, box, &c. plant, or repair.

NURSERY.

Stir, and fork in a little ſhort well rotted manure, 70.
Dig ground to be planted, a week before it is wanted.
Sow ſeeds of trees, &c. and guard againſt mice, &c. 72, 79.
Tranſplant ſeedlings deſigned for ſtocks, &c. 72.
Suckers of plums, *cuttings* of quinces, codlin, &c. 74.
Prune, or dreſs up, young trees and ſhrubs from ſuckers, ſtraggling ſhoots, and form the heads, 73.
Dig about ditto for purpoſes as directed, 79.

* * * * * *

NOVEMBER.

THOUGH the *laſt* be the better month for planting, yet this is more commonly the time adopted: It cannot be now proper to delay it. The leaves not being all off ſhould be no obſtacle.

The object of *pleaſure* ſhould not yet be given up; and let the gardener do all in his power to be cleanly and neat, giving his grounds that proof of good culture, which is ſo eſſential to his credit.

Anticipate *winter*, ſo as to put all in order, and furniſh the ground early; provide againſt *froſt*, leſt it come unawares.

MISCELLANEOUS WORK.

Wet, if it ſtands any where, let it be drained off, 114.
Vacant ground, dig, manure, trench, or at leaſt hoe, 46.
Clear away dead plants, leaves, weeds, and all litter, 54.
Weed borders and crops, as ſpinach, winter onions, &c.
Graſs plats, cleanſe, roll, mow, and lay *turf*, but ſoon.

Gravel walks, weed, clean, and roll hard after rain, 54.
Compoſts, collect, and mix well the materials for them.
Cucumber and *melon* earth, ſtore in dry time, 178, 195.
Earth up peas, beans, celery, cauliflowers, &c. 49.
Blanch endive, 221, chardons, 218, and finochio, 250.
Dig up carrots, potatoes, Jeruſalem artichokes, and parſneps, but not all the latter, 222, 230. Alſo when in proſpect of *froſt*, ſome red beet, ſcorzonera, ſalſify, ſkirrets, Hamburgh parſley, leeks, turnep radiſhes, and horſe-radiſh, all of them to be preſerved a while in a cellar, or longer in *dry* ſand. See *cauliflowers* below.
Lettuces in frames, under hand-glaſſes, &c. attend, 226.
Artichokes, cut, ſee to, when in proſpect of froſt, 202.
Aſparagus, dreſs beds of, and alſo ſeedlings ſoon, 205.
Raſpberries, dreſs in the firſt week; ſee laſt month.
Hot-beds may be uſed for ſmall ſallading, 249, mint, 253, lettuces, 227, or for radiſhes, 239.
Froſt, conſider what ſhould be protected from it.
Fruit, lateſt ſorts, gather in the firſt week; and manage that already houſed, 262.
Onions, ſtore of, look over to remove decayed ones, 229.
Seeds, dreſs, put up clean and dry, and keep them ſo.
Caterpillars on winter greens, ſearch for in time.
Grubs about the roots of *lettuces*, ſearch for, 227.
Shrubs, prune and dig about; faſten trained ones, 111.
Prune all trees, except figs, but cherries the firſt, 143.
Figs, pull off green fruit, faſten ſhoots, 151.
Cover the roots, and *ſtake* new planted trees, &c. 102.
Cauliflowers under glaſſes attend to, and thoſe in head, break leaves over. This vegetable, and *brocoli*, may be taken up when in proſpect of froſt, and planted with balls of earth, or only laid in a cellar, where they will keep (perhaps) a month; but tie the leaves together at the tops with ſtrong baſs or a hay-band before they are taken up, 216.

SOW

Small ſallading and *lap lettuce*, under glaſs, warm border, or rather on a little heat, 227, 249. *Radiſhes*, purple ſhort top, ſecond week, warm border, 238. *Carrots*, early horn, 214. *Beans* and *peas* firſt week, for a principal early crop, 207, 231.

PLANT

Celery yet, 217. *Lettuces*, 226: and *cauliflowers* yet, in frames, under hand-glaſſes, or cloſe under a ſouth wall, 214. *Endive* ridged, 220. *Coleworts*, 219. *Cabbages*, 211; and all in the firſt week, though the latter may be later. *Mint* on heat, 253. *Wall-trees*, and others ſoon, 30, &c. 95, &c. *Shrubs*, deciduous, but not evergreens, 117, &c. *Strawberries*, upon neceſſity, but do it firſt week, 39.

PROPAGATE

See *laſt month*, by ſuckers, ſlips, diviſions, cuttings, and layers, as roſes, &c. 94, &c.

FLOWERS.

Take up dead flowers, and *tie up* thoſe in blow, 55, 56.
Froſt, beware of, as to the care of tender flowers, 362.
Auriculas and *carnations* in pots, protect, 359, 361.
Seedlings in boxes, &c. place in the ſun, and protect.
Pots of hardy flowers are themſelves preſerved, as well as the plants, by plunging above their rims, 358.
Bulbous and *tuberous* roots, plant and protect, 286.
Biennials and *Perennials* hardy, plant early, 283.
Thrift, plant or repair, as ſoon as may be, alſo *box*.

NURSERY.

See laſt month; and do *ſoon* what was then omitted

Cover

Cover the roots of newly planted things and lightly all feed beds and feedlings of tender ſorts, 99, 69.

* * * * * *

DECEMBER.

THE garden is no longer a decorated ſcene; but it contains many things of *promiſe*, which demand attention, and which the induſtrious gardener will afford, agreeable to the culture that each requires.

There are ſtill ſome works of *labour*; and where there is plenty of dung and frames, *hot-beds* may be made uſe of, and *ſpring* anticipated.

If this month be called *dreary*, yet ſtill the face of nature has charms, and invites us ſometimes abroad, even when covered with ſnow. Froſt is clearly beneficial, it dries the path, it ſtrings our nerves, exhilarates our ſpirits, purifies the air, and prepares the ground for future produce.

> All *nature* feels the renovating force
> Of *winter*, only to the thoughtleſs eye
> In ruin ſeen. The froſt-concocted glebe
> Draws in abundant vegetable ſoul,
> And gathers vigour for the coming year.
>
> THOMSON.

MISCELLANEOUS WORK.

Weed crops, &c. *clean up* litter, and ſtill be neat, 54.
Gravel walks, roll hard, if dry, againſt wet and froſt.
Graſs plats, cleanſe from worm caſts, ſweep and roll.
Mice traps, ſet about peas, beans, cauliflowers, &c. 233.
Caterpillars in trees, *ſnails* in walls, and *ſlugs*, ſee after.
Tools, make, repair, grind, and keep bright, 276.
Seeds, look over the ſtock to keep them clean and dry.
Fruit and *onions*, examine, remove decaying, 229, 263.

Straw,

Straw, damp or muſty, remove from ſtore rooms.
Froſt, guard againſt the ill effects of every where.
Wheat ſtraw, uſeful to protect things, ſee radiſh, 238.
Vegetables, before hard froſt, take up, ſee laſt month.
Artichokes, *aſparagus*, and *raſpberries*, (if not before) give their winter dreſſing to ſoon, 202, 205, 164.
Endive, tie up when perfectly dry, and ridge ſome, 220.
Earth up (dry) celery high, alſo cauliflowers, chardons, brocoli, ſavoys, cabbages, &c. preſſing the mould.
Cauliflowers and *lettuces* in frames, &c. manage, 214, 226.
Planting, prepare for, and open the holes ready, 29, 97.
Vacant ground, clean, dung, rough, dig, or trench, 46.
Barrow, make uſe of when froſt to wheel in dung, &c.
Hot-beds, ſee and manage the materials well for, 170.
Cucumbers may be ſown in the laſt week, 174, 176.
Compoſts, make, and incorporate well by turning over.
Orchards, prune trees, dreſs, dig, or plough the ſoil, 43.
Prune wall pear trees, eſpaliers, and ſhrubs, 153, 160.
Hedges, *ditches*, and *drains*, manage as the caſe requires.
Drain wet from orchard, garden, nurſery, &c.
Spring, have a conſtant eye to, and prepare things for.

SOW

Beans, 207. *Peas*, 231. *Radiſhes*, 238. *Carrots* may be *tried* as radiſhes. *Lettuces* ditto, under glaſs in a warm border. *Small ſallad*, as *creſs*, *muſtard*, and *lap lettuce*, on a ſlight heat, 227, 249.

PLANT

Mint on heat, 253. *Trees* and *ſhrubs* of the hardy deciduous kind, in open weather, covering the roots and ſtaking; if againſt a wall faſten them to it, 97, &c.

PROPAGATE

By *ſuckers*, *cuttings*, *layers*, &c. ſee *October*, 64, &c.

FLOWERS.

FLOWERS,

Take care of, but neither ſow nor plant; yet ſome chuſe to ſow *auriculas* in this month, 359.

Covering of every kind is to be *no* cloſer, or longer kept on than *neceſſary*, for great danger ariſes from much nurſing, when plants come to be expoſed again. See laſt month.

Auriculas ſee to, and take off dead leaves, 358.

Carnations guard againſt mice and much wet, 361.

Pots of hardy flowers, to protect, ſee laſt month.

NURSERY.

Protect, as the weather may require: all *new planted* things, cover the roots of them well, 99.

Seedlings of tender things may be covered lightly all over, but uncover in time, 69, 73.

Froſt-cracks in ſeedling beds, fill up with ſifted mould.

Wet (much of) gives froſt ſo great hold, that it ſhould be particularly guarded againſt. 358, 360.

Vermin muſt be attended to, particularly mice, which are apt to bark, and ſo kill young trees, 73.

CLOSE.

Nature attend! join every living ſoul,
Beneath the ſpacious temple of the ſky,
In adoration join; and, ardent raiſe
One general ſong.———

Soft roll your incenſe, *herbs*, and *fruits*, and *flowers*,
In mingled clouds to HIM, whoſe ſun exalts,
Whoſe breath perfumes you, and whoſe pencil paints.

THOMSON.

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*** The CALENDAR will be found accurately to direct, from time to time, the work to be done relative to each of the foregoing articles, as sowing, planting, &c. And not to swell the *Index* to an unnecessary size, the author has brought into it the mention only of a few things from the *Calendar*, as what is there directed has most of it appeared in the work before. The *Calendar* is only a help to recollection, and with a glance of the eye may be seen every thing the Gardener has to do: he is there referred back for more ample information, if he needs it.

☞ The many uses (as mentioned in this work) to which *hand-glasses* may be profitably applied, induces to recommend rather an ample furniture of them. Also to have plenty of *garden pots* of all sizes, that plants may be accommodated with just such a sized pot as is proper for them.

†† To the article POTATOE, concerning *Seedlings*, page 236, add; —The Potatoes produced from each Seed should be kept separate, and two or three from each carefully boiled also separate, and being tasted by a good judge, choice of sort made accordingly, to be planted for Propagation; the size, shape and colour, being in a measure considered as well as flavour.

ERRATA.

Page	21,	line	16,	these, *read*	some.
	66	—	7,	head, ——	hard.
	111	—	19,	lie, ——	die.
	127	—	25,	crowed ——	crowded.
	134	—	36,	trelly ——	trellis.
	154	—	31,	turfs ——	tuffs.
	226	—	28,	neat ——	near.
	285	—	4,	seedings ——	seedlings.
	359	—	3,	formed ——	forked.
	216	Bottom, *leave out*, —" Or for a few Plants."			

HINTS

ON THE

METHOD OF MANAGING POND-FISH.

THE quantity of Fiſh to be ſupplied obviouſly depends upon the quantity of water, which ſhould be divided, where it conveniently can, into five ponds; theſe may be diſtinguiſhed by the five firſt figures, as, 1, 2, 3, 4, 5.

Number 5 is intended for Breeding, and ſhould be double or treble the ſize of any of the other ponds. Or if this be inconvenient, there may be two marked No. 5. This pond may likewiſe be the moſt diſtant from the houſe. If the Breeding Pond ſhould fail to anſwer this purpoſe, it will at leaſt ſerve as a conſervatory for Fiſh of ſmall ſize, to be obtained elſewhere: and indeed freſh ſtores in any caſe will be found deſirable. The contents of this pond in Carp and Tench, or the greateſt part, ſhould be taken out annually in September, or October, counted in braces; and ſuch as are from five to ſeven inches long thrown into No. 4.

The contents of No. 4, when grown one year from the length of five or ſeven inches, muſt be put into No. 3. The contents of No. 3, having grown one

year from No. 4, muſt be removed into No. 2. And in like manner the contents of No. 2, after one year, muſt be removed into No. 1, which is to contain only ſuch Fiſh as are fit for the table. It is obvious that this pond, for ſafety and convenience, ſhould be the neareſt to the houſe.

As No. 5 is to be the largeſt water, ſo No. 1 is to be the leaſt; the reſt, of ſizes between the two.

The ſhape of No. 1 ſhould be oblong, for the convenience of the net, and the leſs diſturbance of the Fiſh in taking out what are wanted from time to time.

A book ſhould be kept by the Gardener, of the number and ſize of each kind in every pond.

Carp are fit for the table from three to ſeven pounds each. Tench from one pound and a half to three pounds each. Perch from three quarters of a pound to one or two pounds, &c.

It is ſuppoſed that none of the ponds have a ſtrong current of very cold, acrid, innutritious water.

One acre of water upon a loam, clay, or marl, or any of theſe with a mixture of gravel, has been ſtated to be capable of ſupporting 2000 pounds weight of Fiſh: the number of the Fiſh making that weight being immaterial.

Carp and Tench breed moſt freely in ponds, or pits newly made. Tench likewiſe in almoſt any ponds, where cattle are admitted.

It is evident that Perch and Pike ſhould not be admitted in any degree in No. 5; but in all the other numbers, beſides their own value, they are of important ſervice, provided that they are ſtrictly confined to a ſize greatly ſubordinate to that of the Carp, or Tench. For they deſtroy not only the accidental ſpawn of Fiſh which breed, but alſo ſeveral Animals, whoſe food is the ſame with that of Carp and Tench, as Frogs, Newts, &c. Pike above the weight of one or two pounds muſt not be admitted even amongſt Carp of the largeſt ſize and weight.

With regard to the abſolute weight of Fiſh, which any particular pond will ſupport, this can only be determined by obſervation and experience; as it depends on the different degrees of nutrition in different waters. It is ſaid, that Carp and Tench in waters which feed well, will, before they are aged, double their weight in one year.

The third part of an acre in No. 1 would probably be ſufficient for the demand of any family. For, upon the calculation above given, it would ſupport near 700 pounds of Fiſh, which might be divided thus.

50 Brace of Carp, of three pounds each and upwards.

50 Brace of Tench, of two pounds each and upwards.

50 Brace of Perch, of one pound each and upwards.

That is, three Brace of Fiſh, weighing at leaſt twelve pounds for the uſe of every week.

Allowing one acre for No. 5, one third of an acre for No. 1, and one acre and two thirds for the intervening numbers, the whole water would be three acres. Upon this calculation the ſtock of No. 1 at 8d. per pound, would be worth 23l. 6s. 8d. per annum, and the expence annually of changing the Fiſh from No. 5 to 4, &c. will not exceed 1l. 6s. 8d. So that the value of each acre would be at loweſt 7l. 6s. 8d. annually.

No. 1 being ſuppoſed to be near the houſe, and at no great diſtance from the garden, if the Fiſh ſhould not thrive ſufficiently, which will be ſeen by the diſproportioned ſize of the head, and the whiteneſs or paleneſs of the ſcales, they may eaſily be ſupplied with more food by looſe peas from the garden, the ſweeping of the granary, worms ſaved by the Gardener in digging, and the offal of the poultry killed for the kitchen; or by letting down the water about two feet. in the ſpring or ſummer, where there is a ſufficient ſupply, and ſowing the ſides with oats, barley, rye, or wheat, very lightly raked in, and then ſtopping the ſluice again.

In

In ponds already ſtocked, but not accurately regulated, it would be adviſeable to begin with that which has the moſt Pike, otherwiſe with No. 4, or what is intended for No. 4, and throw all the Fiſh under five inches length into No. 5, and the larger, according to their ſizes, into the other numbers: and ſo on with No. 3, 2, and 1.

Store-Fiſh procured elſewhere, if taken in ſummer, ſhould be moved in the night in clean ſtraw, wetted occaſionally after they are packed: except Perch and Pike, which can only be carried in clean pond or river water. In moving Fiſh from one Pond to another, they ſhould be firſt put into tubs of water already prepared for them, and afterwards carried in buckets without water. In taking Pike, or Perch, great care muſt be obſerved to avoid raiſing mud in the water.

In Breeding Ponds all water-fowls, as Geeſe, Ducks, &c. ſhould be diſcouraged; and Herons carefully deſtroyed. If any white Fiſh, as Roach, Dace, &c. ſhould be found, they are to be taken out; and if there be a ſpare piece of water for large Pike, they ſhould be put into it as food for the Pike.

Eels may be put with advantage into any except the Breeding Ponds, in lieu of Perch. The moſt eaſy way of taking them is by trimmers laid over night, baited with ſmall Fiſh, not with worms: otherwiſe they may catch the Carp: or a ſmall thief net may be baited with white Fiſh.

Common ſewers and drains from the laundry are prejudicial to fiſh: ſo are the leaves falling from trees in great quantities. The uſe of grains ſhould likewiſe be avoided in large quantities, as having little nutriment whilſt they are thus waſhed by the water.

It ſeems better for the uſe of the table, as well as more humane, to kill Fiſh deſigned for food by an inciſion with a ſharp-pointed pen-knife, or punctures, made with a pin longitudinally into the brain, about half an inch or an inch, according to the ſize of the Fiſh,

Fish, above the eyes. As this produces an instantaneous effect, it would probably save the cruel operation of crimping or flaying fish while alive; as in the case of Pike and Eels.

It is obvious, that this method of regulating Fish will apply with its full effect in larger spaces of water: it will likewise apply in a considerable degree to smaller pieces: even where the change is but from a pond for the use of cattle to a single canal in a garden.

In situations near the great inland manufactures, and near the turnpike roads leading from an easy distance to the metropolis, water may be made by this kind of management, with little trouble or expence, to produce a large annual rent.

*** Mr. Marshall was favoured with this paper on *Pond-Fish* by an eminent literary character in the Church—"A member of the free Agricultural Society at St. Petersburg;" and the best method of breeding, feeding, and preserving Fish, cannot but be esteemed a valuable part of *Rural Economics*.

ON THE

PROFESSION OF A GARDENER.

HE who undertakes the *profeſſion* of a gardener, takes upon himſelf a work of ſome *importance*, and which requires no ſmall degree of *knowledge*, *ingenuity*, and *induſtry*, to perform *well*. There are few buſineſſes which may not be learned in much leſs time than that of a gardener can poſſibly be.

It often happens, however, that a man who has been very little in a garden, and that only as a *labourer*, who can do little more than dig, or put out cabbage plants, will call himſelf a *gardener;* but he only is worthy of the name who having had much practice in the various parts of horticulture, poſſeſſes a genius and adroitneſs, fitting him for making experiments, and for getting through difficulties that the exiſting circumſtances of untoward ſeaſons, &c. may bring him into. He ſhould poſſeſs a ſpirit of enquiry into the *nature* of plants and vegetation, and how far *art* (in his way) may be made ſucceſsfully uſeful, or at leaſt probably ſo. The mode of growth, the pruning, the ſoil, the heat, and the moiſture that ſuits particular plants, are not to be underſtood without a native taſte, and cloſe application of the mind. "Gardening depends more upon the labour of the brain than of the body."

There

There are few things to be done in a *garden*, but which require a dexterity in operation, and a nicety in hitting the proper season for doing it. A *gardener* should be a sort of prophet in foreseeing what will happen under certain circumstances, and wisely cautious to provide (by the most probable means) against what *may* happen.

A man cannot be a *good gardener*, except he be thoughtful, steady, and industrious; possessing a superior degree of *moral* excellence, as well as genius and knowledge adapted to his business. He should be modest in his manners and opinions. It too often happens with those who have much practical skill, that they slight what is *written* upon subjects of their profession; which is a fastidious temper, that the man of *real* merit will hardly possess.

The knowledge of *botany* is not necessary to the business of a practical gardener, but it might be made useful to him, or at least a matter of amusement and relaxation, enabling him to be respectably communicative. Some knowledge in this way he will perhaps not content himself without, if he has any thing to do with the *green-house*, and *hot-house*, as many curious plants are admitted there.

The character of a *gardener* is here set high; but it is the *goal* of respectability at which *he ought* to aim, who presumes to call himself a *professed* one; and no doubt there are many in noblemen's and gentlemen's services, who *are* thus respectable in their abilities and conduct.

It remains for the *employer* to consider the *merits* of his gardener, and reward him accordingly. He should reflect upon the importance of his *garden* to himself, family, and friends; and how *great* difference there is between one *well*, and one *ill* managed. If the soil and situation is untoward, or the season cross, (which in *England* is very apt to try a gardener's skill and patience) he should be ready to make allowance, as

there

there is little to be done in working againſt nature; and to the moſt attentive and ſkilful in the art of gardening, accidents will ſometimes happen, that *might* have been prevented. "In the work of a garden there is no ſuch thing as always proceeding with certainty and inſuring ſucceſs."

A *gentleman* ſhould conſider that he who furniſhes him with fruits and vegetables, almoſt lives in the garden; and that he cannot *relax* in his duty without his neglect being *manifeſt*, by ſerious conſequences following it. There is always *ſomething* for him to do, that muſt be done *now*, to ſow, plant, prune, dreſs, &c. &c. "Whoever will give himſelf the pains to trace a good gardener through the ſeveral ſtages of his employ, in all ſeaſons of the year, will find it to be one continued circle of labour and toil."

A *gardener* is, in many reſpects, differently ſituated to the other ſervants about a gentleman's houſe, and theſe diſcriminating circumſtances, are what may be ſaid (according to general eſtimation) not to his advantage. A *gardener* has reaſon, indeed, to love his employment, as he meets with *health* and *tranquillity* in the exerciſe of it; but conſidering what he *is*, and what he *does*, in his proper capacity, he may juſtly claim a ſuperior degree of eſtimation and reward.

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